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ORIGINAL ARTICLES

TONSILLECTOMY BY ELECTRO-CAUTERY DISSECTION.*

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"Removal of Tonsillar Hypertrophy by Electro-Cautery Dissection" is the title under which I originally described this operation, the paper being first published in the *Journal of the American Medical Association*, Nov. 22, 1890.[1] [2] The operation was designed and first put in practice at my clinic at the Chicago Postgraduate Medical School in January of that year and, as the results attained were highly satisfactory, I continued to employ it in both clinical and private practice, though, as with every original procedure, it has, with time and increased experience, passed through certain evolutionary changes, so that the technique I at present employ is somewhat different from that employed at the start.[3] Difficulties were from time to time met, which were successively overcome, particularly by improvement in the instruments and apparatus employed. At first, it being the age of the storage cell, I had to contend with the usual train of troubles which were common with that style of device for furnishing the electro-cautery current. Since adopting the excellent transformer of the Victor Electric Company I have had no further trouble in securing the required volume and amperage of current, so that the cautery points can be heated to the desired degree and continuously maintained thereat. The transition from storage cell to transformer relegated to the past the disagreeable experience of being compelled to either postpone or discontinue a partially executed operation, owing to the running down of a vacillating cell.

The operation of cautery dissection was designed in order that flat and degenerate tonsils could be removed in their entirety, as there can be no valid argument advanced for allowing any pathological tissue to remain, since such tissue can, at best, be regarded as only the remains of a

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former tonsil. Many of my operations are done to remove the diseased base remaining after a previous tonsillotomy.[4]

In early life the tonsils are detrimental chiefly on account of their size, whereby they act as an obstruction to respiration. If not at this time removed by the operation of tonsillotomy, the protruding portion of the

Fig. A.—Fauces in repose, with left tonsil partially covered by hypertrophied anterior pillar or plica triangularis.

tonsil gradually diminishes in size, hence the claim of the old-time doctor that Nature effects a cure through atrophy. The fact is that, as the protruding portion diminishes, the buried base increases in size, hence the transition is largely a process of submersion. Furthermore, this change

is brought about by a low grade of inflammatory process, during which the lymphoid element melts away, while the follicular element relatively enlarges, hence a formation ensues of large crypts and lacunæ from which caseous, fetid material can be readily expressed. By the use of a bent probe it can be demonstrated that the crypts are as much as one-half inch

Fig. B.—"On the Gag," with arch showing "line of demarcation."

in depth.[5] A tonsil of this description may easily escape the eye of the inexperienced observer, as it is often hidden behind the anterior pillar and may even, in fact, lie at the bottom of a distinct concavity between the pillars, so that it can only be seen when drawn up from its bed by the use of a vulsellum forceps, or when the patient is caused to gag

forcibly, when a bulging, ragged mass is revealed (Fig. B). When this condition of the tonsils is present, all of the mucous membrane back of the anterior pillars will be excessively red and more shiny than normal, constituting a chronic pharyngitis, while, on the pharynx, granular enlarge-

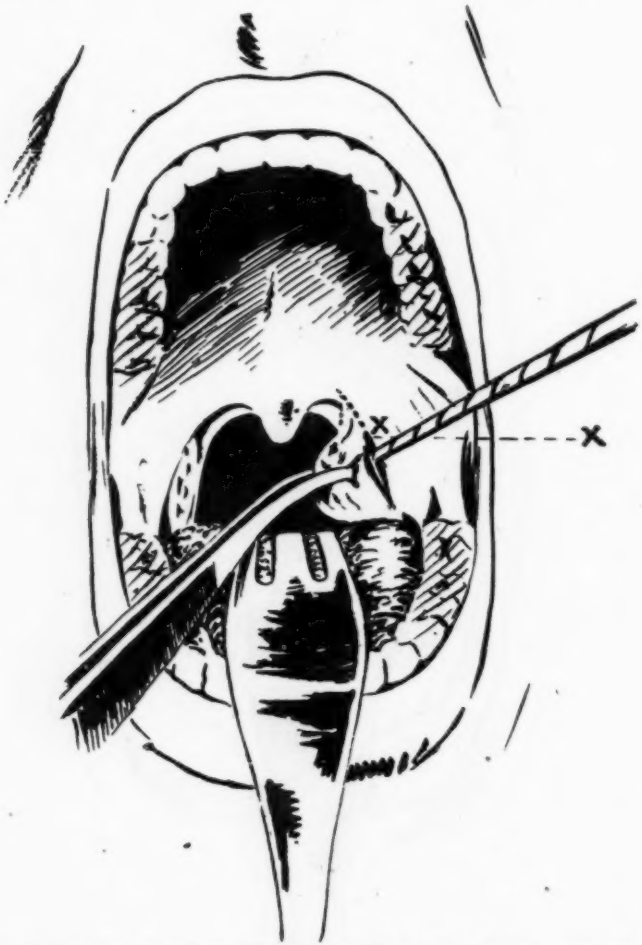

Fig. C.—Showing first or primary incision, beginning at point X and succeeding incisions by dotted lines.

ments are not infrequently observed. A thickening of the lateral bands of the pharynx is also frequently present, to which has been given the name pharyngitis hypertrophica lateralis. Between this area of redness and the mucous membrane further forward there is a distinct line of demarcation, intensified when the patient gags, and forming an arch, the

upper and central portion of which is lost in the uvula, which serves as a keystone (Fig. B). A free amount of frothy saliva completes the picture.[4] The tongue is usually coated, indicative of digestive disturbance, and not infrequently an offensive breath is observed. Constipation is

Fig. D.—Showing posterior incision.

generally complained of. The throat is often acknowledged to be sensitive and easily affected by exposure during inclement weather. One or more attacks of acute tonsillitis at some time in the past is often reported. If the patient is a vocalist, the voice will be described as being unreliable, or, instead, the report may be that of a lost voice. A spasmodic cough will

at times be mentioned and can often be excited by touching a sensitive point on the tonsil. There will also, occasionally, be observed a swelling and tenderness of the submaxillary or deep cervical lymphatics. While submersion of the tonsil is a condition most often seen in adults, it will

Fig. E.—Showing top of tonsil being pulled out as puncture is made.

not infrequently be observed to a certain degree in children, when it may be described as a condition of semi-submersion. The submerged or degenerate tonsil is often present without the patient having the slightest suspicion thereof, as there is never experienced any degree of acute in-

flammation. There are, though, other manifestations due to the tonsillar trouble which are rarely associated therewith by the patient.

As in several cases a susceptibility to acute attacks of coryza has subsided after a radical removal of diseased tonsils, it became clear that the

Fig. F.—Showing the bottom incision.

latter had a causative influence upon the former. Tubal occlusion with the secondary middle ear manifestations, and particularly tinnitus, are often benefited by the total removal of diseased tonsils. The relationship is well recognized between catarrhal conditions of either the pulmonary or gastro-intestinal tracts and the descent of malsecretions from the nasopharynx.[6] As an active pair of degenerate tonsils can yield a

much larger daily crop of pathologic material than usually falls from the nose, it is safe to give the tonsils credit for being the greater evil of the two, particularly when, by microscopic and bacteriologic tests, the secretion therefrom is found to be even more noxious than the other. And,

Fig. G.—Showing left tonsil out and tongue depressor with saliva ejector attached.

again, while the secretion from above is felt by the patient and is, during waking hours, to a large extent, expelled by expectoration, the secretion from the tonsils is chiefly squeezed out by deglutition while eating and, hence, is swallowed unobserved. Again, while postnasal secretions cause systemic infection mostly through their descent to either the pulmonary

or gastro-intestinal tracts, a different condition exists as regards the disposition of the toxic secretion generated in the diseased tonsil, for it is equally prone to being directly absorbed through either the lymphatics or the blood, and is thus at times the distinct cause of systemic troubles

Fig. H.—Showing both tonsils out.

at distant points.[7] [8] As tubercular germs are frequently found in the tonsils, much attention has of late been given to this avenue for systemic infection. The intimate connection between the tonsils, the deep cervical lymphatics and the pleural cavity has been observed by different writers and explains the case of pulmonary invasion, as shown by Wood[9]

in a recent paper based upon his personal experiments, as well as upon the findings of other investigators.

Having become fully convinced of the intensely pathologic nature of the degenerate tonsil, the question arose as to the best method for its thorough eradication. Owing to its being, to a large extent, submerged (Fig. A), it was necessary that the successful operation should leave a pronounced depression or concavity, instead of a plane surface as after ordinary tonsillotomy. Furthermore, as the operation was chiefly to re-

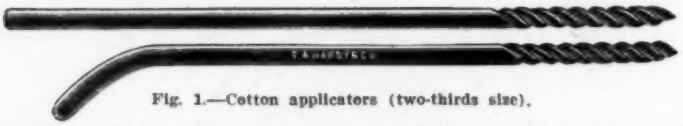

Fig. 1.—Cotton applicators (two-thirds size).

move diseased tissue it was more essential that the incisions should be made with deliberation and in as nearly a bloodless field as possible. The most feasible plan seemed to be a dissection with a cautery point, as, when properly operated, each little vessel should be sealed as it is severed, thereby giving the bloodless field so much desired. It must be remembered that, if the point is too hot, it will cut like a knife and not close the severed vessel, while, on the other hand, if not hot enough, it will not advance through the tissue, nor will it properly release itself from the eschar, and will thus tear it, so, in either event, hemorrhage must ensue. An electric generator is, therefore, required whereby the desired heat of the cautery point can be maintained, which I found to be a nearly white heat when exposed in the open air.

If the patient possesses an intolerant throat, as is generally the case with degenerate tonsils, I direct him to practice several times daily for a few days a sort of drill whereby the faucial intolerance can, to a large extent, be overcome. This drill is much like that of the sword swallower and consists of titillating the fauces with different substances, such as the finger, a spoon handle, the handle of a tooth brush, etc. In order to instruct the patient as to the method, I give him a printed sheet of direc-

Fig. 2.—Electrode for cataphoresis (two-thirds size).

tions, in which is fully described the course to follow. I never operate when an acute inflammation is present.

Sufficient anesthesia is generally secured by swabbing the parts with a solution of cocain. I use a large cotton applicator (Fig. 1) and have the patient make the application once a minute for about twenty minutes, one swab serving for six or eight applications, when a fresh swab is given him. For the first two swabs I use a 10 per cent. solution of cocain, while, for the third swab, a 20 per cent. solution is used. I caution him to expectorate from time to time and not to swallow the cocain. My preference is to operate after the patient has had a hearty meat meal, in this way diminishing the tendency to intoxication from the drug. I do not

recall ever having seen prostration from cocain when thus used in the fauces. My solutions contain one-half as much carbolic acid as there is of the cocain. In one case a complete anesthesia was secured from the use of only a 5 per cent. solution, though my usual custom is to use the 20 per cent. solution as described, which is effective in 90 per cent. of cases, so that but little or no complaint is made as to pain. Occasionally,

Fig. 3.—Tonsil syringe (half size).

I have to use a 33 per cent. solution and have in a few cases applied powdered cocain on the moistened swab which gives 100 per cent., or full strength. In rare cases the patient does not anesthetize by local applications, so I resort to other methods. In a few cases I have employed cataphoresis with success, using a special applicator (Fig 2) for the positive current, though I more often use deep injections of a sterilized one-half of 1 per cent. solution of cocain without the addition of carbolic acid. For this purpose I employ my tonsil hypodermic syringe,[10] and find very delicate needles the best for deep injections. I formerly injected only beneath the mucous membrane of the pillars, so as to produce a bleb, but have latterly been convinced that the deep injections are more effi-

Fig. 4.—New cautery handle (three-fifths size).

cient when injected deep into the pillars, as well as into the base of the tonsil, only a few minims at each point selected, say at a dozen or more points (Fig. 3).

By resorting to either or both of these latter two methods, in conjunction with the swab, I can secure anesthesia in all cases. During the operation, if a sensitive point is reached, I apply for a moment a 20 per cent. swab in the wound. In any case where excitement is present, or a prostration is feared, it can be either overcome or averted by giving a ten-drop dose of volasem, which is a proprietary compound and is made from an extract of wood-violet to which strophanthus and calabar bean are added.[11]

I am at present using a cautery handle which differs from the one I formerly employed.[12] The essential feature in this new handle is that

the contact is secured by the sliding of one tube in another, whereby the possibility of corrosion is overcome and a perfect contact is always assured. By a spring mechanism the current is automatically broken as soon as pressure is released from the contact lever. The electrode sockets are made extra long and are also conical, as well as the handle ends of the electrode, so that perfect contact and a tight fit is secured, which is

Fig. 5.—Tonsil cautery electrodes (four-fifths size).

entirely free from the usual and annoying wobble heretofore always present. This new handle has been made, in accordance with my suggestions, by the Victor Electric Company. A windlass for the hot snare, while not shown in the cut, is supplied with the handle (Fig. 4).

The electrodes I now use are of a new style made by the Converse Electric Company, and are thoroughly aseptible, being made of two semi-circular wires twisted about a strip of fiber (Fig. 5). For tonsil work I have them 5½ inches in length. The burning point is of iridoplatinum, No. 23 gauge. I have used a larger wire (even as course as a

Fig. 6.—Tongue depressor with saliva ejector (one-fourth size).

No. 20 gauge) in order to get greater rigidity when heated. By having the cautery rheostat correctly placed, the No. 23 gauge gives the best results and, if not pushed too fast, in other words, if allowed to burn its way through the tissue with moderate traction, it will not bend out of shape. The disadvantage of the coarser wire is that it radiates too much heat. A red hot needle can be held quite close to the cheek without in-

convenience, while a red hot poker held at the same distance would burn, and yet the degree of heat would be the same in each case, though the volume of heat bears direct ratio to the bulk. In addition, the finer the wire the more rapidly it both heats and cools, which is of great advantage in this work. By using the finer wire, the burn is more superficial and, therefore, causes less soreness than did the coarser wire which I formerly employed. The points are bent in two directions, either vertical or lateral from the line of the handle, and are reversible, though, in use, the

Fig. 7.—Spring tonsil forceps No. 1 (three-fifths size).

electrode is generally so placed that the point inclines downward. In the illustration different degrees of bend are shown, Nos. 1 and 2, at an angle of about 45 degrees, being most often required. There are conditions in which Nos. 3, 4 or 5 are more convenient to use. The cords are extra heavy and five feet in length. With nervous patients a head rest is at times advantageous. With the new Allison rhinological chair, a good head rest is furnished and any desirable position or degree of elevation of either seat or back is easily attained. While not a necessity, a good fountain cuspidor is more than a convenience and gives an extra advantage owing to the saliva ejector attached.

During the operation I have the patient with his right hand manage the tongue depressor. This occupies his mind. Furthermore, he is less liable to induce gagging then when the tongue depressor is held by an assistant. Latterly, I have had a saliva ejector attached to the depressor (Figs. 6 and G), whereby either blood or saliva is promptly removed so the patient does not interrupt the operation to expectorate. When operating without the fountain cuspidor the same tongue depressor is employed minus the ejector.[10]

Being right handed, I generally operate on the patient's left tonsil first. For this tonsil an electrode is used, the point of which is so bent as to be in line with the handle (2 L, Fig. 5). The tonsil is then securely grasped near its center with the mouse-toothed No. 1 forceps (Fig. 7) and forcibly lifted from its bed. It will thus be seen to rise and move

Fig. 8.—Spring tonsil forceps No. 2 (two-fifths size).

about beneath the anterior pillar, and its anterior boundary will be but slightly back of the previously described line of demarcation, while the top of the tonsil will be found to be as high or higher than a horizontal line drawn from the base of the uvula. The heated cautery point is then entered to a depth of nearly one-half inch at the anterior margin of the tonsil quite near to its superior border, and a slightly curved incision is made downward about parallel with the demarcation line, the tonsil

meantime being pulled outward and backward (Fig. C). Instead of one long incision, a series of shorter incisions or dissections are more often made down or near to the pillar attachment to the tongue, becoming more shallow as the bottom is approached. A return is now made to the starting point and, by one or more shallow incisions, the upper margin of the tonsil is followed to an apex above its center by upward strokes, when by downward and deeper cuts the tonsil is separated from the posterior pillar, the traction meantime being changed to outward and forward (Fig. D). The tonsil forceps is now made to grasp the upper portion of the tonsil and, with suitable traction either forward or backward as required, by continuous dissection the top of the tonsil is disengaged from the supratonsillar fossa, so the remaining depression at this point will be about five-eighths of an inch in depth. After the top of the tonsil is thus thoroughly released, with the traction continued as before, I next make a downward puncture in the middle of the wound, with the heated point at the junction of the tonsil with the pharyngeal aponeurosis (Fig. E) and,

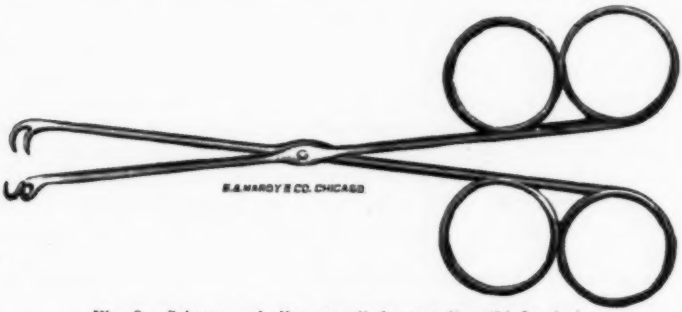

Fig. 9.—Scissors vulsellum tonsil forceps. (two-thirds size).

from this puncture, dissect forward until the front margin is reached when, by a return to the point of puncture, I dissect rearward to the posterior margin. In this way the incisions are gradually continued downward and outward at an angle so as to be near the surface when the bottom is reached. By now pulling the tonsil upward and changing the position of the electrode by entering it at the bottom of the primary incision, point upward and handle tilted about 20 degrees above the horizontal, with one or two curved backward strokes (Fig. F), the bottom of the posterior incision is reached. The tonsil is now attached by only a pedicle near its bottom, which can be readily severed by first placing the electrode, with point turned downward and outward, against its front edge as the tonsil is being pulled outward and backward. Then, with a firm backward and upward lift with the electrode, the tonsil is swung well forward so as to stretch the pedicle over the cautery point, which is then heated and the pedicle severed. At times this same method of procedure can be advantageously employed at other and preceding stages of the operation and in removing remnants.

As during the entire operation firm outward traction upon the tonsil

is employed, the work is, in reality, all done in plain sight, and not in a hole, though after the operation a deep hole remains, deepest at its upper margin and gradually scaling outward to the surface at its base; hence the submerged tonsil somewhat resembles a wedge in shape. The remaining wound is much larger than the tonsil removed, which is, in part, due to some tissue having been destroyed by the cautery, but more to the elasticity of the pillars after being disengaged from the tonsil which previously bound them together (Fig. G).

The pulling out of the tonsil as described is permitted by the stretching of the cellular tissue beneath the pharyngeal aponeurosis, which latter constitutes the bottom of the resulting wound. In fact, this structure, by the strong traction when the operation is half way done, may, if not too much bound down by inflammatory adhesions from preceding attacks of quinsy, bow outward to such a degree that the dissections, instead of being on the line of a concavity, are really on the line of a convexity, like the peeling of an orange, in order not to penetrate the aponeurosis. The direction of the incision can at any time be easily ascertained by releasing the forceps traction for a moment, when the parts will resume their normal position.

In this way the entire tonsil is removed, including all of the patho-

Fig. 10.—Author's tonsil snare (one-third size).

logic follicular element. Formerly, I divided the operation in two steps, two weeks apart, removing, at first, only the upper half, but latterly I remove the entire tonsil at a sitting, except in rare cases where hemorrhage is encountered. In some cases, the surface of the tonsil is so rotten that the No. 1 forceps tears out. In such cases, I use the No. 2 forceps with more mouse teeth and further fortified with opposing serrated surfaces (Fig. 8). These latter are often convenient for grasping sidewise, either front or rear, any small remaining remnant. These forceps are both spring forceps which automatically disengage and release their hold as soon as pressure is removed and have no spring lock, which I consider a detriment.

Occasionally, where the tonsil is bound down by adhesions due to previous acute inflammatory attacks, in combination with the friable or rotten surface alluded to, a forceps is required which will take a more forcible and deeper hold, when I employ my scissors vulsellum tonsil forceps (Fig. 9) with best results.[13]

Occasionally, when faucial intolerance is pronounced, and when the tendency to gag is increased by the tilting over of the nearly detached tonsil so that it touches the tongue, instead of completing the operation with the cautery point, I sever the pedicle with the cold snare[14] which causes a moderate amount of hemorrhage, though easily controlled by iced

gargles. I also use the snare (Fig. 10) in the same way for completing the operation, if the operative field is much obscured by hemorrhage.

The operation as described usually requires from ten to twenty minutes, though in one case I removed an entire tonsil in two minutes and a half. This operation, particularly in a sensitive throat, requires a certain degree of dexterity which can only be acquired by practice.

In the operation as described, it might seem to the spectator that the patient is being needlessly robbed of a good deal of the anterior pillar. Formerly, I tried to leave all that seemed to be pillar, though it necessitated the formation of a pocket in the wound if all of the tonsil was removed, and thus gave increased discomfort and also retarded healing. Another and more important fault from trying to leave all of the pillar was the failure to remove all of the tonsillar tissue lying beneath this pillar covering; hence a continuation to a limited degree of the pathologic condition which the operation was intended to remedy. I soon became convinced that, in this condition of the tonsil, the anterior pillar was also hypertrophied and that the posterior half, which covers the tonsil, was chiefly a mucous membrane containing little or no muscular tissue, it being often spread out so as to cover the lower half of the tonsil (Fig. B, left tonsil). In some cases this lower portion of the anterior

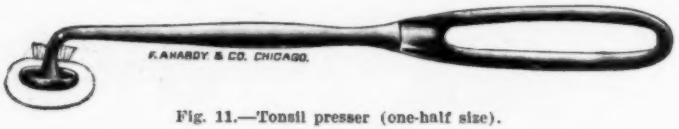

Fig. 11.—Tonsil presser (one-half size).

pillar, when extending backward over the tonsil as described, is so thick that it may be mistaken for a portion of the tonsil itself. In no case by following my described line of incision has the patient, after healing of the wound, given evidence of having sustained any loss of either structure or function.

With the submerged tonsil the posterior pillar is generally quite thoroughly attached thereto and has often lost all structural resemblance to pillar tissue, seeming instead to be a part of the tonsil. In fact, the two pillars and intervening tonsil often constitute an agglutinated hypertrophied mass, so that, when the throat is in repose, it presents simply a flat surface. In all cases I dissect out a posterior pillar which during the process of healing assumes the appearance of a normal pillar, notwithstanding its previous degenerate aspect. In operating the second or right tonsil, generally two weeks after the first, being right handed, I use at the start an electrode, the point of which is nearly in line with the shaft (No. 3, Fig. 5), and with this make the primary incision at the posterior edge of the anterior pillar, as well as the second incision to the apex, and then a short start downward on the posterior incision, but after this I change to an electrode, the point of which is so bent as to be at a right angle to the line of the handle, the bend being downward (No. 1 R, Fig. 5). Another difference which follows this change of bend is the following: When operating the left tonsil, in the making of all downward incisions,

the handle is swung from the horizontal position 90 degrees to the vertical. When operating on the right tonsil, the handle is held horizontal most of the time, the downward incisions being made by a downward and outward pull either forward or rearward. After the change is made to the angular electrode, the operation is continued much as described for operating on the left tonsil, except when making the bottom surface incision I enter the point at the bottom of the posterior incision, the handle meantime being swung downward and beyond the vertical to the extent of about 20 degrees, which causes the electrode point to tilt upward to the same degree. I then cut forward to the bottom of the primary anterior incision, and, while severing the pedicle, I enter the electrode at the rear thereof, the point tilting upward as before, and cut forward and outward, in this way reversing the process employed with the left tonsil. For these last two steps, if time is taken to change the electrodes, a more convenient way is to use a left tonsil electrode so placed in the handle that the tip points upward.

After the tonsil is half removed, the wound being dry, I swab all the

Fig. 12.—Author's tonsil hemostat (one-half size).

traumatic surface, including that of the loosened tonsil, with a 90-grain solution of argentum nitras before separating the lower half. In this way, if a little hemorrhage occurs while doing the lower half, the parts painted with silver are not so likely to bleed by sympathy. Before doing this I have seen bleeding extend to all parts of the wound if a little bleeder is struck at any time when near the end. In this way by the use of silver and careful work I frequently remove a tonsil without the loss of a single drop of blood from the wound and without the saliva being discolored by the few drops of blood which always exude at the points where the forceps takes hold. In case a slight hemorrhage begins at any point, it can generally be stopped by a series of touches with the cautery point at a cherry-red heat, and often without the knowledge of the patient, so that he may think that the operation is bloodless.

As the tonsil has such a rich supply of blood and is in such close proximity of the larger vessels, branches of which are at times either anomylous or enlarged, any tonsil operation is likely to produce a hemorrhage.

In my experience, hemorrhage has been much less frequent in late years than formerly, which is, in part, due to improved technique, though largely due to the taking of more active and prompt steps to control it in its incipiency. A large majority of all hemorrhages occurring can be controlled by gargling with an iced alum solution or by the use of the tannogallic acid mixture.[3] When these fail, a hypodermic injection of either ergotole or morphin is generally effective, particularly in combination with the feeling of faintness which is often produced by the injection.

For the control of tonsillar hemorrhage, pressure is the most positive procedure to adopt and, in case of a little spurter, it can generally be arrested by digital pressure if promptly applied. A more convenient method is to employ a tonsil presser (Fig. 11), the pad of which may, if desired, be moistened with a hemostatic, Monsel's solution being the best. In case prolonged pressure is required, it is wise to apply a tonsil hemostat (Fig. 12). In an experience of seventeen years in tonsil work, I have applied the hemostat only four times, in two cases it being done to hasten the stoppage of a hemorrhage which gave every evidence of being near its finish.[14]

Owing to paralysis of the muscular coats of the vessels from the cocain, a delayed primary hemorrhage is liable to occur within twelve

Fig. 13.—Tip of lateral swing atomizer (full size).

hours of the operation, though this rarely occurs in favorable cases, if the patient follows directions by avoiding all physical exertion and prolonged efforts at conversation. I also advise against the recumbent posture during the first night's sleep and recommend passing the night in a tilted rocker or a reclining chair. The greatest danger point is 10 or 12 hours after operation, when the patient drops in a doze and begins to snore. When the vessels are atheromatous, as in rheumatism or kidney disease, or after a life of intemperance, there is an increased liability to hemorrhage. Women are less liable to hemorrhage than men.

The fatalities reported after tonsillotomy have generally been due to the leaving of a fibrous base which prevented the closure of bleeding vessels. In case of a fibrous tonsil, the operation of cautery dissection gives greatest promise of immunity from hemorrhage, as the lines of incision are below the fibrous tissue.

Occasionally following the operation, there is some febrile reaction, which is relieved by one-drop doses of the tincture of aconite given hourly. If the tongue becomes much coated, I order one or two doses of sulphate of magnesia. Secondary hemorrhage may occur at any time during the first week from the separation of portions of the slough, though this is rare and the likelihood of its occurring diminishes day by day from the time of operation. In any event if it occurs it can be quickly controlled by iced gargles.

As an after-treatment I advise soft foods for a few days and the fre-

quent use of a gargle of Merck's bicarbonate of soda, about one dram to half a pint of water. I also advise the use, every hour or two, of an antiseptic gargle as follows:

℞. Hydrozone ..... ℥ii
Thymoline ..... ℥iv
Aq. ext. hamamelis ad ..... Oi
Sig.: Use 3i with aqua 3i as a gargle every two hours.

During the daily office treatments, I first spray the wound with the D-P solution,[14] using low air pressure. As the spray is to be directed sidewise, and as it is desirable to hold the spray bottle upright, a device is advantageous whereby the former can be accomplished. At my suggestion, the DeVilbiss Manufacturing Company modified their excellent atomizer so that this can be done and, as the revolving end piece can be swung about laterally as desired, it is equally suitable for either side (Fig. 13). As a local application after the spraying, I have found nothing better than "eisen-glycerin," consisting of equal parts of tincture ferri chloridi and glycerin, with which the wound is daily massaged with the long bent cotton applicator, gently at first, but with increased vigor as the soreness diminishes, in order to remove adventitious granulations and make the wound heal up smoothly and solidly. While most patients prefer soft foods for a week or ten days, I have had a few cases wherein there was practically not the loss of a meal. After the first week, the progress is very rapid and the wound is practically healed in two weeks' time. In order to guide the patient properly as to diet and other after-treatment, as well as to direct what to do in event of an emergency, as a hemorrhage, I give him a printed sheet of directions, in which is incorporated all needed advice. By these means it is rare that the patient is incapacity from attending to his usual duties.

During the operation of tonsillectomy in case of a "small diseased" or degenerate tonsil it is no uncommon occurrence to encounter cysts which are filled with a softened cheesy and malodorous secretion, which cysts are at times as large as a good-sized green pea.[3]

As to the results derived from the operation described, the patient, in addition to a permanent immunity against future attacks of acute tonsillitis,[15] will experience such improvement in the general health as might be expected from a loss of the former contaminating influence derived from diseased tonsils, hence the operation is recommended not only to relieve past or present bad effects, but also as a prophylactic step, whereby future troubles are averted, as, for example, chronic catarrhal deafness or the chances of tubercular infection.

Following the operation there is almost an invariable improvement in digestion and assimilation with an increased intestinal activity, whereby the former constipation is corrected, as well as the bad breath. There is often an increase in weight and a clearing up of a former muddy complexion,[17] which is always appreciated by lady patients. The tendency to rheumatism is also diminished or, if present, an eventual cure thereof may be attained.

Furthermore, a marked improvement follows as regards the former

faucial redness with a fading away of the granular pharyngitis, and, in a vocalist, an improvement in the singing voice with an elevation in the high register of two or three notes.[18]

Correct patterns of the instruments I employ in this operation are kept in stock by F. A. Hardy & Co., of Chicago.

103 State Street.

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THE OTTAWA TENT COLONY.

J. W. Pettit, M.D.

OTTAWA.

In complying with a request to give a brief history of the Ottawa Tent Colony and the work it has done, permit me to say, by way of preface, that this institution is a part of the very systematic and comprehensive crusade against tuberculosis which was inaugurated by the Illinois State Medical Society at its meeting in Bloomington in 1904. The special feature of the program was a symposium on tuberculosis, in which the information given was presented in popular language and was intended to stimulate the medical profession and enlighten the laity. The essayists were all men who are well equipped and of high standing in the profession. To Dr. George W. Webster, president of the Illinois State Board of Health, was assigned the subject of "Mortality from Tuberculosis in Illinois for the Years 1902 and 1903," and to Dr. Chas. L. Mix, "Factors Causing Consumption and Furthering Its Spread; Suggestions for Its Prevention." "The Diagnosis of Pulmonary Tuberculosis," by Dr. Frank Billings; "The Treatment of Tuberculosis," by Dr. R. B. Preble; "The Annual Economic Loss to Illinois from Tuberculosis," by Dr. Homer M. Thomas, and "The Duty of the State in Restricting Tuberculosis," by Dr. Harold N. Moyer, all of Chicago, were other papers.

This symposium was presented to a very large audience. The addresses created so much interest that the press of the state gave the facts and opinions expressed very wide publicity, and it is safe to say that, within one week after their presentation, the subject of tuberculosis was brought directly to the attention of every reading person in the State of Illinois.

Inasmuch as great emphasis was laid upon the fact that tuberculosis could be cured anywhere, and in view of the further fact that this statement was in such direct opposition to what had previously been taught, it was believed by those directly engaged in the work that, in order to establish this fact, it would be necessary to demonstrate the curability of tuberculosis in our Illinois climate, a thing hitherto generally believed impossible. At the suggestion and with the aid and co-operation of prominent members of the Illinois State Medical Society, the writer was induced to establish a tent colony at Ottawa, primarily for the purpose of demonstrating the curability of tuberculosis in this climate and incidentally to

Fig. 1.—General View of Camp and Administration Building.

influence the legislature to provide a state sanatorium for the tuberculous poor.

The tent colony was opened with two patients, July 1, 1904. The equipment and accommodations were necessarily very simple, being nothing more than those usually afforded by an ordinary camping outfit. Through the kindly assistance and co-operation of the medical profession and the secular press, the number of patients increased so rapidly that it was difficult to provide accommodations for them, and, within six weeks from the time of the opening, we had eighteen patients. By the first of October the number had increased to thirty. Up to this time all our work had been done in tents. It then became necessary to provide winter quarters, which we did by remodeling an old building which had been used as a dance hall in a public park near by. This provided us with

administration facilities, which were not very inviting, but which would protect us from the inclemency of the winter weather. A part of the building was set aside for the housing of patients through the winter. In the meantime the patients were allowed to remain in their tents, with the understanding that on the approach of cold weather they would be expected to move indoors. Much to our surprise, the patients preferred to remain in their tents all winter, the coldest experienced in this section of the country during the last thirty years. This they did of their own accord. Instead of suffering from the cold, they were comfortable and

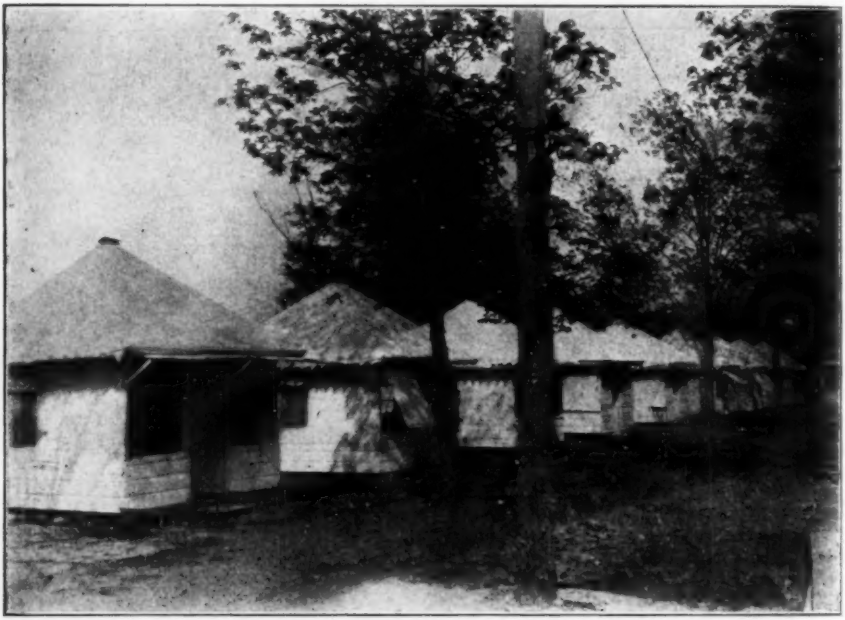

Fig. 2—A Street of Tents.

rather enjoyed the experience. Several of those who were accustomed to living in frame houses declared they would have been less comfortable had they been at home. Even new arrivals during the extremely cold weather insisted upon going to tents. This was believed to be too severe a test, but in no instance had we cause to regret yielding to the entreaties of the patients. Their action is the more remarkable when we take into account the fact that many, if not most of them, had come from homes where it was difficult to drive them away from the vitiated and superheated atmosphere of badly ventilated houses. While our accommodations were very meager and unsatisfactory in many respects, the results were equally as good as those obtained during the last winter with a much more complete equipment and pleasant surroundings. This experience

is another illustration of the satisfactory results which may be obtained from a simple and inexpensive equipment.

Tent life as carried out in the treatment of tuberculosis soon becomes thoroughly enjoyable. Before beginning such a life patients almost invariably entertain exaggerated ideas of its dangers and inconveniences. A short trial soon dispels this fear and they are with difficulty induced to return to indoor life. Experience teaches that the results are even better in winter than in summer. A tuberculous patient, when well fed and warmly clad, feels the exhilarating effects of cold weather quite as much as the normal person.

The total number of patients admitted to April 1, 1906, was 255, of which 49 were then under treatment. Of the 151 who were discharged or who left of their own accord, 21 were incipient, 81 were advanced and 49 far advanced cases. Fifty-five remained less than thirty days and are not included in our statistics. The results have been fully equal to those obtained elsewhere with the same class of patients.

The obstacles to success have been no greater than were to be expected. The advanced stage of the disease in many cases and the various causes which operate to prevent patients from continuing treatment are responsible for a large number of failures. These conditions are improving very rapidly, as the public and profession are learning the limitations and conditions of treatment. Opposition to the location of an institution of this character was very decided and for a time seriously threatened its existence. We experienced the unfortunate conditions which have arisen as a result of the unqualified statements so frequently made as to the contagiousness of the disease. The people have very naturally associated the danger from tuberculosis with other contagious diseases with whose virulence they are more familiar. By tact and diplomacy we succeeded in enlisting the aid of a few of the more intelligent and reasonable citizens and by bringing the community into close touch with our work have succeeded in convincing them that sanatoria for the treatment of tuberculosis are not a menace to the people in the communities where they are located. We have so far succeeded in doing away with this unreasonable prejudice that it is safe to say that if an attempt were made to remove this institution to another locality strenuous efforts would be made to retain it. This in itself is a decided advantage to the cause in general, and serves to illustrate not only that these institutions are not a menace, but that the people can be so convinced where the necessary care and discretion is used in handing so delicate a proposition.

At its inception there was no thought of conducting the enterprise beyond the session of the legislature for 1904-5. It was hoped and expected that it would be the nucleus of a charitable institution. The failure of the legislature to make the necessary appropriation left one of two alternatives, either to discontinue it or conduct it as a private enterprise. The demonstration created a demand for an institution of this character. Those most largely responsible for its existence saw very clearly that if the enterprise were abandoned the reasons might not generally be understood, and the fact that it had been discontinued would be

regarded as an evidence of failure to carry out the primary object, which was to demonstrate the curability of tuberculosis in the climate of this State; hence the present management were induced to conduct it as a private enterprise.

Improvements involving an expenditure of $40,000 have been or are in process of being made, which provide accommodations for one hundred patients. The improvements include an administration building, water works, first-class bath house, infirmary, better equipped tents, beautifying the grounds, etc. In order to place the diet of patients on a more

Fig. 3.—Dining Room in Administration Building.

scientific basis, domestic science has been introduced under the direction of an experienced graduate of one of the foremost technical schools in the country. Instead of "forced feeding," as it is ordinarily practiced, we provide a balanced ration, and encourage our patients to eat more than the ordinary amount by providing well-cooked food of the best quality, temptingly served. The tedium of the treatment is relieved by music, entertainments, lectures, launches, suitable amusements, etc.

While the institution must of necessity be conducted as a private enterprise, it is still under the fostering care of the prominent medical men who were influential in establishing it, and will remain a public institution in effect, although it must be supported by the contributions of patients. It is believed that its educational and statistical value will be even greater than if it were a State institution, for the reason that it

will not be subject to the fluctuating and uncertain conditions surrounding a public institution, but will be absolutely dominated by medical influences. This will give an opportunity to work out many problems not otherwise possible.

The four things thus far successfully demonstrated by the Ottawa Tent Colony are: First, that tuberculosis can be cured in Illinois. This, of course, was not more than was expected by those familiar with the modern treatment, but was necessary to demonstrate it to the public and profession at large. Second, the practicability of the tent in an unfavorable climate. Third, that the unreasonable hostility to the location of these institutions in populous centers can be successfully combated. Fourth, the advantage of scientific feeding.

No fact in medicine is better established than that climate *per se* is an unimportant factor in the treatment of pulmonary tuberculosis, and the success of the Ottawa Tent Colony is only another object lesson which goes to prove the futility of the claim that change of climate is necessary for a cure in tuberculosis.

THE OPERATIVE TREATMENT OF DISCHARGES FROM THE EAR.*

A. E. Prince, M.D.

SPRINGFIELD.

In offering a paper on the "Surgical Treatment of Chronic Suppuration of the Middle Ear," I have but one conception, viz., to impress on your minds, as general practitioners, the attitude on this subject universally accepted by the otologist, which is rapidly disseminating itself through the ranks of the medical profession. I do not consider the Illinois State Medical Society the place for details of technique, reports of cases or original contributions, and I hope to escape censure if I leave this part of the subject untouched. We all look forward with interest to the meeting of the Section of the American Medical Association in Boston and the Academy of Ophthalmology and Oto-Laryngology in Detroit, when details will be fully considered, which are of least interest to the general surgeon, but will be of much interest to those of us who limit our practice to this field.

I know that many medical men often consider it time wasted to listen to a technical paper on a specialty, but no excuse need be here offered, after calling to mind the fact that 90 per cent. of the cases of septic meningitis are due to suppurative otitis, that 4,000 otitic brain abscesses occur in the United States every year, and that nearly all the cases of thrombosis of the lateral sinus are due to mastoid necrosis. This constitutes a story which should be repeated until it is current knowledge in the mind of every general practitioner.

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* Read before the Surgical Section of the Illinois State Medical Society, at Springfield, May 15-17, 1906.

IDENTITY OF MASTOID ABSCESS WITH CHRONIC SUPPURATION OF THE MIDDLE EAR.

The conception of a mastoid abscess which was formerly entertained was that of an acute inflammation with swelling, redness and fever, which is infrequent in comparison with the chronic discharge from the mastoid cells, due to infection or necrosis. The appearance of pus in the meatus indicates a perforation of the tympanum. A perforation of the tympanum indicates a suppuration in the middle ear. Suppuration of the middle ear means infection of the tympanic cavity and mastoid cells. They are inseparable, and a suppurative process in one usually means an infection in the other. The aditus ad antrum is a short canal furnishing free communication between the tympanum and the antrum of the mastoid, and it is difficult to conceive of a suppuration in the tympanum without involvement of the mastoid and *vice versa*. This is true in acute middle ear infections which usually recover by Nature's effort, as well as the necrotic type which rarely heals spontaneously.

Our minds have been kept in a state of inertia regarding the true import of this relationship by the marvelous vis medicatrix naturæ, which is ever asserting itself and saving the physician from disgrace. Nature has been curing so large a proportion of the acute cases that we fail to recognize them as mastoid abscesses until in her struggles she forced upon us symptoms which we could not mistake. When she digested the dead bone, absorbed the cortex, followed the line of least resistance, producing swelling and tenderness over the mastoid, then we inferred it was a mastoid abscess. When she had penetrated the bone and produced a fluctuating subperiosteal abscess, all doubts were removed. But not always even then, for only recently a case was sent to me by one of the good physicians of the country on account of an abscess involving the cheek, temporal region and mastoid field, without a clear diagnosis of the cause. The pus had burrowed under the periosteum, covering the squamous portion of the temporal bone and the parietal and frontal bones up to the temporal ridge. The abscess extended forward, penetrated the periosteum and made an opening for its escape through the conjunctiva under the upper lid. I opened at once down on the mastoid, forward over the ear and downward into the cheek. A mastoid operation was done, subperiosteal drainage was attempted, which failed on account of the septic character of the fistulous tract which was lined with unhealthy granulations, which could not be successfully reached by curettement. Accordingly, the tract was laid open, revealing a large area of exposed bone. This rapidly became covered by granulations and eventually healed. As there is probably no case on record of a mastoid abscess discharging through the conjunctiva of the upper lid, I had a photograph taken near the close of the healing, which conveys a feeble idea of the surface involved.

In case of a swelling of the neck near the mastoid tip, never forget the possibility of a mastoid abscess. The tip of the mastoid contains cells which are prone to infection. Perforation takes place in the digastric fossa, and the pus follows the course of the digastric or sternocleido mas-

toid muscle (Bezod type). Such an abscess may extend to the sternum with baleful results, unless promptly opened and drained. Should pus develop over the mastoid, do not be satisfied with a Wilde's incision, but open the mastoid and secure the best possible drainage. In a recent case the consulting surgeon was inclined to be satisfied with a free opening which revealed a spontaneous perforation. Upon further exploration, it was found that the bone overlying the sigmoid sinus was necrosed, and the sinus covered with granulation tissue. Nature was doing her best to protect, was digesting the necrosed bone, and had made an opening for the escape of the pus. After many months a recovery might have taken place, but who knows whether the odds would have been with or against Nature?

The most dangerous type of cases is that in which the cortex is dense and the aditus ad antrum is narrow. In these cases the pain is likely to be severe and referred to the temporal region with absence of superficial symptoms. Unless recognized early, the pressure is likely to force an opening through the tegmen of the antrum. On account of the great danger attending delay, one is justified in making an exploratory incision leading directly to the antrum.

PAINFUL SUPPURATION.

Painful suppuration is indicative of defective draining, either from one cell to another or of an obstructed outlet through the aditus ad antrum. This indicates increased pressure, and, unless relieved, may result in penetration of the tegmen. In these cases an opening is imperative.

FOUL SUPPURATION.

Foul suppuration means saprophytic decomposition, and, although exceedingly disagreeable, may be accompanied by a free outlet, and hence is less dangerous. Often the coverings of the sigmoid sinus and middle cranial fossa are fortified by the prolonged inflammatory process. The condition may endure for life. In other cases an extension of necrosis develops, when a sense of greatest security is entertained. Profuse suppuration often indicates a dangerous condition due to possible extension of the inflammatory process, and is just cause for anxiety. It may be without pain or odor or fever, and yet may indicate an extension into the cranial cavity.

Remember that the tympanic cavity is small, its capacity being five minims. These mastoid cells may multiply the suppurative area several times. A subdural abscess may exist with a free outlet into the mastoid cells and may still further increase the possibility of discharge. If one has a suppurating ear, which completely fills the meatus at frequent intervals, he should contemplate the possibility of the latter condition.

This condition may be illustrated by a case recently seen in Danville, Illinois, with Dr. Gleeson. Free suppuration without pain, odor or fever had not abated for ten weeks. The man was working daily on street car service. I advised a mastoid exploration, which revealed an extradural abscess and an exposed lateral tissue through three-fourths of an inch of

its course. Good drainage was established through the meatus, and the wound back of the ear closed immediately. Recovery was quick and uneventful.

Here permit me to exhibit some specimens prepared at my request by Mr. Burchell, of New York, which are so cut as to give a very clear conception of the danger attending a chronic inflammatory process of the temporal bone. They are for sale.

PRELIMINARY TREATMENT.

Although the results of medical treatment are not encouraging in chronic cases, yet so frequently do they yield without surgical intervention in cases where we least expect improvement that, before deciding upon an operation, when delay is not regarded perilous, I recommend the following treatment: First, use dioxygen to clear out the pus; second, insert into the meatus ten drops of a 5 per cent. glycerin solution of boric acid and salicylic acid. Churn so as to force the solution into the tympanum. In many cases the solution finds its way into the antrum of the mastoid, and often cases of chronic offensive discharges are cured when we least expect it.

It is hydroscopic and antiseptic, and can be placed in the hands of the patient. The specialist may pack the ear daily with gauze. He may irrigate the epitympanum, curette the tympanic cavity and get results in some cases, as Hotz has pointed out, but by the general practitioner these remedies will not be successfully employed. Such good results have been obtained from the above method that I ask a fair trial of the remedy before deciding on a surgical course in cases which are not imperative.

The surgical pendulum is now swinging in the right direction. The medical and the lay public have become educated regarding what to expect. The surgeon is more careful of his diagnosis and is wiser in recommendations. The public demands a cure. The back-number surgeon who temporized and failed to assist Nature in her efforts to rid the ear of an odious, offensive discharge is disappearing. It is but a few years since the expectant plan would work, but that day has passed. Then the patient knew no better and put up with a chronic, painful, discharging ear, because the physician was ignorant of the possibilities of a cure. Now all is different. Stacke laid the corner-stone and, with Schwattze, built the temple which will immortalize those names. Later improvements were made, notably that of immediately closing the opening back of the ear and draining through the meatus, thus eliminating the most disagreeable element, that of a protracted suppuration through an external opening in the skin. It is for us to learn the lesson and apply it. Each case demands a careful analysis and the exercise of the best judgment to determine the wise and middle ground between conservative medical treatment and radical surgical intervention.

In the New York Eye and Ear Infirmary, a smear is examined in every case and the nature of the micro-organism is ascertained. The streptococcus demands early attention. The pneumococcus and staphylococcus are regarded as less urgent. When the cause is scarlatina, it is more likely to be intractable than when due to a mild infection, such as

measles. Pain or cerebral symptoms or high temperature are important guides to an early operation.

LEUCOCYTOSIS.

Increased leucocytosis is not apparent in chronic suppuration of the ear, except in case of extensive invasion of the soft tissues or cranial cavity.

LUMBAR PUNCTURE.

A most valuable aid, and one which is insufficiently recognized, to guide us in making a decision regarding the probability of an extension of the inflammation to the meninges is lumbar puncture. We are indebted to reports of Drs. Chavasse and Mahon for exhaustive work on this subject in its relation to inflammatory extension from the ear. So valuable are his views that I append an abridgement of his conclusions.

1. Lumbar puncture for the examination of the cephalo-arachnoid fluid for color, bacteriology and cytology is a reliable means of diagnosis of endocranial complication of the ears. Done without aspiration, and with the patient lying down, it is nearly always harmless.

2. If the liquid is clear, and after centrifugation no bacteria or polynuclear leucocytes are found, the negative diagnosis of bacterial meningitis is assured.

3. A cloudy liquid, with increased tension and quantity, containing pyogenic bacteria, indicates pyogenic meningitis, and is an early symptom.

The value of these conclusions was brought to my mind a short time ago by a case of mastoid necrosis, on which an operation was contemplated. We were forced to a prompt conclusion by the sudden development of pain, swelling and nausea, vomiting and a rising temperature, initiated by a chill. Before deciding upon an operation for a supposed meningitis a lumbar puncture was made by Dr. Monroe, which revealed the fluid to be normal in quantity; absence of tension, normal color and constitution. On this was based a diagnosis of extracranial inflammation, which, after a few hours, developed into an unmistakable facial erysipelas. Had I operated, she probably would have died. Lumbar puncture probably saved the patient and my reputation. It also increases the confidence of the community in correct diagnosis, every mistake in which tends to destroy confidence in surgery, as well as the surgeon.

PROGNOSIS.

The prognosis in surgery of suppurating ears is good, provided the surgeon knows his anatomy and applies intelligent technique. Ignorance of anatomy begets timidity and results in leaving infected cells, which may, after the wound is healed, suppurate and enter the cranial cavity. Egotism begets recklessness and encourages the operator to overstep the mark and encroach on the vital structures without weighing the costs. The operator must know the anomalous position of the antrum sigmoid groove and various conditions of the temporal bone. He must not judge the difficulties of a radical operation by the simplicity of an acute mastoid in which Nature has already effected a cure. In the radical opera-

tion for chronic suppuration, we are obliged to find the necrosed spots and eradicate them. This requires a knowledge learned only by painstaking study, dissection and experience. The operator must know his anatomy in the dark. The field is bathed in blood; he must remove the cortex and all the cells down to the inner table, when he is within a millimeter of the dura mater, and yet he must not injure the horizontal semi-circular canal, the lateral sinus, the cochlea, fenestra ovale or rotundo, the facial nerve or the carotid artery.

My earlier experience was that of anxiety; my later that of confidence. When one is uncertain whether he gets all of the diseased tissue he fears the result. When he knows he has done a good operation he counts on an uneventful recovery. In a small percentage in which the arachnoid has been involved or manifests itself in the form of cerebral or cerebellar abscess or sinus thromobosis, death may result in spite of every effort. But no department of conservative surgery is making more progress in the confidence of careful operators and the thoughtful members of the profession than this radical operation for suppurating middle ears.

THE LOGIC OF ABDOMINAL PAIN.*

J. L. Wiggins, M.D.

EAST ST. LOUIS.

It would seem to the casual observer that the territory represented by the abdominal and pelvic cavities and the comparatively few organs contained therein, which ordinarily are subject to acute inflammatory disease, the location of each in health varying but slightly from relative fixed position, their function being known, and the symptoms incident to pathological conditions to which they are severally liable, would be understood by the careful investigator and the symptoms recorded so concisely that the individual who only occasionally comes in contact with these lesions would have little difficulty in recognizing them. Theoretically, this is true. Practically, it is not. When we speak of a diagnosis as applying to diseased abdominal organs, it does not apply to an ultimate diagnosis so much as to a primary one. As an illustration, after an appendicular abscess has formed, self-evident by sight or touch, or after a malignant growth of the stomach has reached a stage of development where its form can be outlined and the so-called cachexia is in evidence, or when after a long period of illness a fistula appears from which are discharged biliary calculi, it requires no especial knowledge on the part of the physician to make a diagnosis, and, so far as the benefits accruing therefrom are concerned, the diagnosis might as well not be made.

Throughout the ages the cry has been for more light. Ofttimes to the student the question is presented, Are we in need of greater knowledge or are we slothful in intelligently applying that which we possess? Every ailment which flesh is heir to has a language peculiarly its own. Usually

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* Read before the Surgical Section of the Illinois State Medical Society, at Springfield, May 15-17, 1906.

it is pain, pitched to a higher or lower key, but indicative of the chord touched and the strength of the touch. It is not that pain language is so difficult to master or uncertain in its expression as it is our own incompetence in its interpretation. Each year of our present progress proves the correctness of this assertion as we see the number diminish in that great army of so-called neurotics, doubly punished, first, in their bodily pains and, second, by the mental torture in being discredited by those from whom they seek relief.

The object in the study of abdominal pain is for the purpose of making an early and exact diagnosis. Upon these grounds only can we presume a rational treatment. Let me emphasize here that a rational treatment does not always indicate the use of a knife. It is not intended to convey the idea that in every case the hand should be stayed until an exact diagnosis is made. If so governed, we would again enter the jungle of uncertainty from which we have just emerged. But when exactness is not attainable, which condition arises in the series of so-called border cases, it is within our province to conclude an involvement of a certain organ or of its neighboring organ, or perhaps both. This is a diagnosis based upon probabilities, and forms, when conscientiously executed, a legitimate basis for exploratory incision. It were well if the proper status of the exploratory incision could be fixed within some reasonable bounds. As now existing and applied by the leading operators it requires no apology. Advantage is taken by many, who are lax in their efforts in analyzing symptoms or eliciting histories, as an excuse for ill-advised operations. This is unfortunate; for it may be assumed that a man who is incompetent to form a fair conception of conditions, which are likely to be met previous to opening the abdomen, will not be able to properly dispose of them after they are found; or, failing to find pathologic conditions, will remove necessary healthy organs.

Assuming that primarily none are endowed with the power of discerning what organs are affected or to what degree, it is well to inquire as to the necessary equipment of the surgeon or diagnostician. Should his education and practice be confined within the narrow limits of one cavity or circumscribed field? We think not. The rule is that one who expects to know much about one subject must know something about many. One who essays to pose as an operator must possess not only a deftness in operative work, but must also be a skilled diagnostician. We can reconcile the latter without the former, but the rule is not reversible; the basis for either is the same. A mastery of the fundamentals, thus equipped, there still remains the acquirement of the sixth sense; the ability to pick up some obscure, attenuated symptomatic thread and follow it. This brings us, logically, to a consideration of the various means by which conclusions are reached. Naturally, the one symptom for which relief is sought becomes paramount. This, as a rule, is pain. Where this can be analyzed in its incipiency, unvexed by strenuous, misapplied efforts or soothed by opiates, it will furnish us data sufficiently accurate upon which to base a correct opinion. Unfortunately, in many instances, the ideal is not attainable. Lesions which were primarily localized have extended, or may

have become general and the patient's mind is burdened, not with the first pain impressions, but with the latest. While nearly 80 per cent. of our abdominal work is done for pathologic conditions involving organs situated on the right of the median line, and while this territory, being under suspicion, claims our first attention, it is well to remember that pain, dependent upon certain laws for its expression, may, by reason of malposition of an organ through arrested development, adhesions, intrusion upon the territory of a neighboring organ, nerve pressure, etc., become misspelled, and is thus projected to a point, near or remote, which is entirely free from disease. Contrariwise, pain may be in complete abeyance, notwithstanding extensive and vital involvement. As an illustration of the former condition, we may refer to involvement of the right lower intercostals in pleuritic inflammation, when the pain through the eleventh and twelfth intercostal nerves is projected to the appendicular pain center. A like condition occasionally occurs in Pott's disease. The writer has also noted cases previous to vesiccation in herpes zoster. An obscure and intractable case of sciatica, which occurred in my practice, which had baffled diagnosis and the usual treatment, was clearly traceable to an attack of appendicitis, which occurred in infancy, with recurring attacks of a catarrhal nature. Investigation showed inflammatory bands, binding the appendix firmly across the sacro-lumbar cord.

To prove that the latter condition, or absence of pain, in many instances is fraught with grave consequences, under certain conditions, we have only to call attention to that type of peritonitis known as deaf and dumb; or the equally hopeless postpartum state of septic phlebitis, to which disease is attached much that was discreditable in former hysterectomies.

Fortunately, pain misspelled is the exception and not the rule, and by it we are able to recognize certain points which speak plainly when properly interrogated. Age, sex, vocation and environments furnish valuable data; while personal and family history ofttimes turn doubt to a certainty. In interpreting plain language relative to age, we are aided by the knowledge that certain organs are more susceptible to involvement of a known kind during a specified period in life. This may be due to normal evolution, lax attachments, entrance upon functional activity or its decadence. Thus, in an infant suffering from a severe abdominal pain, we would suspect intussusception; while, if the patient was nearing the climacteric, malignancy, gallstones or intestinal obstruction would be suggested. In like manner, if between the age of 10 to 30 in the male, the appendix would be under suspicion; while if a female, and anemic, a gastric ulcer; if slender, prolapsed kidney; or, according to age and social condition, the involvement of the uterine adnexa. Vocations requiring use of certain minerals suggest their toxic effects, as do those callings wherein sudden, violent abdominal muscular strain indicate possibility of hernia. Personal and family history can not be too carefully weighed. While an enlightened understanding does not burden humanity with diseases supposedly transmitted from our ancestry to as great an extent in the present as in the past, yet, in many instances, we are able to trace a

coincidence of similar affections savoring of direct inheritance. Personal history is not in like manner hedged with doubt. Age, sex and vocation being considered, we are concerned as to the manner and time of invasion and the supposed exciting cause. Did it follow dietetic excesses, exposure, or was it the result of trauma? Is it a chance acquaintance or an old friend? If the latter, are the attacks frequent, are they severe and is the patient free from annoyance in the interim? The character of pain must be considered, whether sharp and lancinating or dull and throbbing; or occupying the varied degrees of intensity between slight discomfort or threatened dissolution. What is its effect upon the gastrointestinal tract? Is there a direct involvement of the structures or is it caused by the sympathetic reflexes? Is it associated with and a possible sequence of existing disease or is it dependent upon conditions affecting individual organs alone? We are aided in our consideration by the fact that certain effects follow closely upon certain causes; and that, knowing the structure and function of an organ and its danger from known causes, we are guided to conclusions. There could be no uncertainty as to whether pain resulted from a perforation of the appendix or from a ruptured tubal pregnancy; one being followed by temporary relief from existing pain unaccompanied by shock, the other heralded by inordinate pain and collapse. A perforating gastric ulcer usually causes greater shock and exsanguination than a perforated gall bladder; and a twisted ureter causes greater local and reflex disturbances than the twisting of the pedicle of an ovarian cyst. Not alone the degree of pain, but its location must be considered. Logically, we assume that an organ occupying a position to which pain is referred, accentuated by pressure, is the organ involved. These areas are known as pain centers, to which the name of the organ normally occupying that position is prefixed. This further restricts diagnosis to circumscribed limits, and, by a diligent search through different avenues at our command, enables us to eliminate other uncertainties. The ease with which the pelvic organs in the female can be palpated would leave no doubt as to whether they or the gall bladder was at fault and would entail little difficulty in discriminating between uterine adnexa and a kidney of surgical interest, and, in the earlier stages, would help us to differentiate between ovarian or appendicular trouble. A urethral searcher or the *x*-ray confirms or eliminates doubts as to the presence of a calculi. The catheter or sound conveys valuable information relative to the conditions existing in the urinary bladder.

One of the fallacies, general among the laity and altogether too prevalent among physicians, is that the summoning of the surgeon presumes an operation. Another equally vicious idea is that an operation is expedient only as a last resort. Considering the frequency in which these errors govern, the surprise is not that surgery falls short of perfection, but that it is not altogether discredited. When we consider the safety and simplicity of an operation when a disease is in its incipiency and confined within the lumen of a dispensable organ, and then contemplate the rapid change incident to escape of infectious material and consequent local or general peritonitis, we feel that the surgeon may be absolved from the

charge of excessive zeal in his endeavor to impress upon the general profession the vital importance of an early and exact diagnosis, supplemented by an immediate operation, whenever an operation is indicated.

11½ North Main Street.

DISCUSSION.

Dr. Robert Gillmore, of Chicago:—I would like to say with regard to the location of abdominal pain that there are certain cases in which pain is referred to unusual locations. In one case under my care, that had been previously operated on for appendicitis without removal of the appendix, I was misled in my diagnosis by the patient referring all his pain to the left costal arch. There was no pain felt at the site of the appendix. A diagnosis of typhoid fever was made, which was confirmed by a partial Widal reaction and agreed to by my consultant. Owing to a suspicious symptom of uncontrollable vomiting, I decided to do an exploratory laparotomy the following day, and a distinct abscess was found on the right side at the appendiceal site. It was opened and drained and the patient made an uninterrupted recovery. Besides having pain referred to the left costal arch in appendicitis, we frequently have the pain referred to the umbilical region.

I would also like to emphasize the point the essayist brought out in regard to the cessation of pain when we have a rupture of the appendix. Quite frequently, in following a case of appendicitis where the pain is quite severe, there may be a cessation of pain. I have recently had a case of that kind. The patient was having a recurrent appendicitis. I was called about forty-eight hours after the attack on account of a severe pain in the abdomen. On reaching the patient the pain had subsided. Although the leucocyte count was low (12,000), I thought there must have been a rupture of the appendix and advised operation, which demonstrated a gangrenous ruptured appendix at the distal end, with a small amount of pus in a little pocket in the peritoneal cavity. The appendix was removed. The patient died on the third day of uremia. Postmortem examination demonstrated an acute nephritis, with blood in the pelvis of the right kidney.

The significance of postural pain is of considerable importance, especially in cases of gallstones. Often patients are unable to lie on the left side on account of pain. They obtain greater comfort in lying on the right side rather than on the back. I would also like to call attention to the character of pain in female diseases where there is a lacerated and relaxed perineum and prolapse of the uterus. The pain is increased on standing and walking, and is worse at the end of the day than at the beginning. This pain is relieved on lying down. When the woman gets up in the morning she feels comfortable, well and vigorous, while at night she has a severe backache.

Dr. Edward H. Ochsner, of Chicago:—The essayist has opened up an interesting field for discussion. I would like to call attention to one or two points. First, that patients with pain in the abdominal region must be examined carefully. It is rather late in the day to make that statement, yet I dare say that one-half of the patients that come to consult us on account of abdominal pain are not stripped and the abdomen is not examined. The first thing, therefore, is to make a careful examination of the abdomen. Second, pain alone is almost useless in determining the location of disease. It is of value in addition to other things, but as a single symptom it is almost valueless, because abscesses of the appendix may cause pain anywhere in the abdomen. And so with all organs of the abdomen. Only in conjunction with otber symptoms is it of value.

Dr. John E. Allaben, of Rockford:—I desire to speak with reference to pain in children. Dr. Herrick of Chicago, some time ago contributed an excellent article upon this subject, calling attention to the pain of pneumonia being referred to the abdominal region, particularly the region of the appendix. This was demonstrated by a case I had some time ago. I was called to a neighboring town with instructions to come prepared to operate on a child for appendicitis. When I examined the case I was in doubt. It is difficult to examine and diagnose abdominal diseases in children. In this case the pain was in the appendicular

region, but I concluded that the disease would prove to be lung trouble and recommended postponement of operative procedures. By the next morning the child had developed a well-defined right-sided capillary pneumonia and the abdominal pain had entirely disappeared.

Dr. Frederick A. Leusman, of Chicago:—A doctor in Chicago made a diagnosis of appendicitis in a child 6 or 7 years old, and he set a day for the operation, which was the next morning. He asked me to assist him in doing this operation. In the evening of the day before the supposed operation another physician, one of the leading internists in Chicago, a professor in Rush Medical College, one of the attending staff of the Cook County Hospital and a gentleman of wide learning and experience, was called, examined the child, called me up over the telephone at the request of the attending physician who was going to operate, and said: "I think the case is one of pneumonia; I will not be responsible for operation in that case." I replied: "My dear doctor, I have not seen the child. I am depending on the man who saw the case, and, knowing that the diagnosis of appendicitis can not be made absolutely by anybody, I was willing to operate; but if you say not, then, of course, we will let it go." Two days later the first doctor informed me the child was dead and had died of appendicitis, with the abdomen in the shape of a balloon.

Dr. Wiggins (closing the discussion):—The responsibilities of an early diagnosis can not be overestimated. To be able to form reasonable conclusions as to the parts involved and the necessity of surgical interference one must, in many instances, exhaust every means which present-day investigation and free interchange of experience of men in like work has placed at our disposal. While in many instances the other fellow is to blame for making diagnosis more difficult, we are forced to admit the most just criticism in the majority of our failures is a lack of thoroughness in our examination. Pain is in most instances the danger signal that attracts attention and guides to conclusions, but it is not to be presumed that we should permit this one symptom to mislead and ignore other means of verification.

THE TREATMENT OF OBESITY AND ITS COMPLICATIONS.*

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CHICAGO.

(Author's Abstract.)

An overgrowth of fatty tissue, as a rule, produces disorders in different organs that call for treatment. It will be found that the reduction of the fat often suffices to remove distressing complications that do not otherwise yield to simple symptomatic treatment. We see analogous conditions in other disorders that are allied to obesity, notably in diabetes and the so-called uric acid diathesis, for here, too, the reduction of circulating sugar and uric acid and its congeners produces an amelioration or a cure of secondary complications. Attempts to reduce obesity, therefore, in many instances, acquire the dignity of causal treatment and become much more than a concession to the vanity of fleshy females.

COMPLICATIONS OF OBESITY.

The organs most frequently and most seriously affected are the heart and arteries, the bronchi, the digestive apparatus, the nervous system and the skin.

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THE CARDIO-VASCULAR APPARATUS.

Upon the heart is always thrown an enormous amount of excessive labor; first, because the body is heavier and locomotion requires more labor; second, because a much larger vascular area than in a normal subject must be supplied, owing to the intricate labyrinth of new blood vessels that form in the adipose tissue; third, because the development of fat in the mediastinum and around and within the pericardium exercises mechanical pressure upon the heart and, hence, interferes with its action; fourth, because fatty degeneration of the vessel walls very often occurs, with loss of their elasticity and, consequently, an increased strain upon the heart muscle; fifth, because the large masses of abdominal fat seriously interfere with the excursions of the diaphragm and, hence, produce a general embarrassment of the venous circulation; lastly, because, either as a result of all this overstrain or as a part of the phenomenon of general obesity, fatty infiltration or fatty degeneration of the heart muscle itself occurs.

As a matter of fact, the affection of the heart is probably the most serious consequence of obesity, for most obese subjects suffer from the heart and die from heart failure. If, moreover, they should become affected with some intercurrent infectious disease, as pneumonia, typhoid fever or tuberculosis, then the resisting powers of the heart are so slight in these cases that death commonly occurs from cardiac weakness. The involvement of the heart in obesity leads to the closing of a vicious circle, for the weak heart action produces an inadequate blood supply to various portions of the body, with insufficient nutrition of muscular tissues and general lassitude; all factors that, in predisposed subjects, favor the development of obesity. On the other hand, as soon as obesity appears, it, in its turn, reacts unfavorably upon the heart.

THE RESPIRATORY APPARATUS.

About the respiratory apparatus, serious disorders are also very common. The fat in the mediastinum and the increased weight of the chest walls, the impediment to the downward excursions of the diaphragm that is created by the overgrowth of abdominal fat, all seriously interfere with the inflation of the lungs and the ventilation of the thorax. As a result, rapid breathing, especially on exertion, dyspnea, and, above all, chronic bronchial catarrh are very common in obesity. The bronchial catarrh is due, in part also, to the venous stasis that results from the cardiac insufficiency. The mucus is, as a rule, very tough and difficult of expectoration. The patients cough terrifically, usually without much relief, as expulsion of the mucus is rendered difficult by the emphysema, the venous stasis in the lungs and the inability to fully expand the chest, as a preliminary to the coughing effort. This condition, again, imposes a severe strain upon the heart, especially the right heart. The bronchitis in obesity rarely yields to ordinary remedies, but is promptly improved, if the obesity is reduced and the condition of the heart improved. In obesity there is, therefore, also from this source, danger of pulmonary infections, and many of these cases succumb to catarrhal pneumonia and,

above all, to tuberculosis. There is a popular prejudice to the effect that obese subjects are not very susceptible to tuberculosis. If tuberculous infection occurs, however, it usually goes very hard with obese patients, and they constitute a large proportion of the cases of so-called galloping consumption.

THE DIGESTIVE APPARATUS.

The disorders about the digestive apparatus are manifold in character. Most of them are due to the venous stasis that results either directly from the heart weakness or indirectly from portal stasis. The most common intestinal symptoms in obesity are hemorrhoids and constipation, both being almost invariably present. The former are due either to portal stasis or to general interference with the venous backflow into the abdomen; the latter is due to the pressure of the fat masses within the abdomen upon the bowel and interference with their peristaltic action; besides, there is always much difficulty in voluntarily raising the abdominal pressure sufficiently to promote normal defecation. The one-sided diet, with the elimination of much fat and carbohydrate pabulum, may also have something to do with the constipation in obesity.

THE LIVER AND ITS DUCTS.

Fatty infiltration of the liver, combined with stasis and, later, with cirrhosis, is not uncommon. Cholelithiasis and dislocation of the liver are not frequent during the stage of obesity, but frequently follow rapid reduction cures, owing to the fact that the support of the abdominal fat is rapidly withdrawn, and malposition of the liver and bending or knuckling of the gall ducts is thereby produced.

THE SKIN.

About the skin a variety of irritative disorders, complicated by secondary infections, are common. They are due both to the friction of abnormally enlarged, adjacent parts of the body and to the profuse sweating that afflicts most obese subjects. The sweating is attributable presumably to an effort on the part of the organism to get rid of surface heat by water evaporation from the skin, especially as normal radiation is interfered with on account of the thick adipose layer that conducts heat so badly. These obese subjects frequently suffer from intertrigo, eczema, furunculosis, carbuncles and sudamina; besides, the skin often becomes torn in its lower layers, thus leading to the formation of striæ, while, at the same time, capillary hemorrhages and venous ectases are frequent, and varicose veins in various parts of the body make their appearance.

THE NERVOUS SYSTEM.

About the nervous system, finally, a great variety of functional disorders, many of them of the neurasthenic type, are common. Most of them are due to the inadequate blood supply to the brain that results from the heart weakness. Apathy and a phlegmatic temperament are notoriously common in obesity. These psychic attributes, combined, as they commonly are, with what is popularly interpreted as a good-natured

disposition, are presumably a result of the bulk of the individual; for, with the difficulty of moving about freely and the inability of speedily carrying the dictates of an ever so energetic will into rapid execution, habits of listlessness, laziness and indifference are easily engendered; consequently, after a time, the bodily condition becomes reflected in the temperament, rather than *vice versa*. More serious manifestations about the nervous system are cerebrospinal apoplexies, which are not uncommon, especially in cases with weak hearts and arteriosclerotic arteries, suffering from various conditions as bronchitis, constipation, etc., which call for violent straining efforts.

CHRONIC ARTHRITIS.

The importance of reducing obesity in a variety of chronic joint disorders may finally be mentioned; for here the reduction of the bulk of the patient by relieving the joints of the labor required to support a large mass acts in the same way as a mechanical support. Thus, the reduction of obesity is a particularly grateful procedure in chronic rheumatism and gouty forms of arthritis.

METHODS OF REDUCTION CURES.

The methods at our disposal for reducing obesity are chiefly dietetic. Second in importance is the regulation of the muscular exercise. These two means, singly or combined, usually suffice to accomplish the desired purpose, for, with a decrease of the intake of fat-forming pabulum and an increase of its destruction by exercise, the fat content of the body must needs dwindle. These measures may to advantage be enforced by certain hydrotherapeutic and medicinal means, the latter finding their chief sphere of application, however, in the symptomatic treatment of the complications of obesity.

THE THREE DEGREES OF OBESITY.

One can conveniently distinguish three degrees of obesity that have been aptly characterized by a German writer as the enviable, the comical and the pitiable stage, the first presenting itself as a pleasing rotundity, the second as a jovial embonpoint of the Falstaff type, the third as a sad, unwieldy and, to our Caucasian tastes, disgusting deformity. Each of these three forms requires particular treatment. In the first form, no attempt need be made to reduce the amount of fat, but every effort should be put forward to prevent its further development, particularly if premonitory signs of complications about the thoracic or abdominal organs begin to make their appearance. In the second and third forms, however, it becomes necessary to institute more or less energetic restrictions, with the object in view of causing a loss of fat.

THE QUALITY OF THE FOOD.

The laity and many physicians to this day direct their attention chiefly to the quality or the preparation of the food in reducing obesity. Certain articles are said to form fat and others not. This idea is erro-

neous. Broadly speaking, carbohydrate and fat foods should be reduced, and not the albumins. This rule is to be observed, not because albumin forms less fat than carbohydrates or fats, but because the reduction of the albumins below certain normal average requirements is a dangerous and precarious procedure, whereas the fats and carbohydrates can be much reduced without much detriment to the individual.

THE CALORIC VALUE OF THE FOOD.

One may say, broadly and with certain reservations, that any article of food can form fat, according to its caloric value; that the introduction of more calories, either in the form of albumins or fats or of carbohydrates, than are required to maintain normal nutritive equilibrium may lead to the deposit of fat in the tissues, whereas the introduction of less calories leads the organism to promptly attack chiefly its fat reserve to make up the caloric deficit.[1] The diet in obesity should, therefore, be arranged mathematically. The normal caloric requirements of the individual must be calculated from his height and weight with the aid of certain tables, the caloric value of the different foods must be known and only so many calories should be introduced with the food that undernutrition, mild, medium or severe, takes place.[1]

THE LIQUID INTAKE.

At the same time, the liquid intake must be regulated, restriction of liquids being essential in some cases, superfluous in others, dangerous in still others; according to the degree of obesity, the rapidity with which a reduction cure is to be brought about and the condition of the cardiovascular, gastro-intestinal and renal apparatus.

MINERAL WATERS.

The use of mineral waters is common in the reduction of obesity. Kissingen, Vichy, Carlsbad, Nauheim, Mariensbad, etc., enjoy deserved popularity as "fat cures." It is a futile task, however, to attempt the reduction of obesity by the use of these waters alone. It is possible, of course, by producing profuse watery diarrhea with the aid of these waters, to cause a considerable loss of water from the tissues, and hence a reduction in the weight of the patient. This practice is of some use for psychologic reasons, because the rapid loss of weight in the beginning of the treatment makes a great impression upon the patient and renders him more willing to follow directions later on. The indiscriminate use of mineral waters is, however, to be condemned; for, if the diarrhea is allowed to persist too long, the effect is, without doubt, weakening, and this practice, moreover, especially in obesity, reacts unfavorably upon the blood pressure and the heart.

RESORT TREATMENT.

These patients, it is true, do very well, as a rule, in resorts in which these waters are taken, but the effects are to be attributed only in a very

1. The technic of the "Science of Reduction Cures" is discussed in full in my recent article on "The Dietetics of Obesity," Journal A. M. A., from which some of the above paragraphs are quoted.

small part to the drinking of the particular water (witness the indifferent effects obtained from the use of these waters or salts at home) and in much greater part to the careful and strict regulations in regard to exercise, general mode of life and diet that the patients undergo much more willingly and conscientiously at a watering place than at home. Fully as useful, probably safer, and by all means cheaper, is the treatment of obesity in an institution where a like control can be exercised over the patient's diet and habits.

TERRAIN CURES.

In Nauheim and certain other watering places, the Oertel Terrain cure is given, by instructing the patients to slowly climb a series of paths that are elevated at an angle of from 0 to 20 degrees; at the same time certain other factors are carefully considered, and, as the heart's action improves and the fat is lost, more exercise is allowed each day. In this way it is possible to carefully grade the exercises and to obtain remarkably good results from this practice.

EXERCISE AND MASSAGE.

Other exercises, besides walking on a level or hill climbing, are bicycle riding, rowing and a number of light out-of-door games. Rowing is especially useful, for the amount of exercise can be carefully regulated, while, at the same time, full expansion of the lungs with improved oxygenation is promoted. In winter, rowing machines fulfill a very useful purpose. Horseback riding enjoys a very good reputation as a means of reducing obesity. This, as a German writer states, is deserved, as far as the horse is concerned, but not the rider. Horseback riding stimulates the appetite more than other exercise, without leading to any reduction of the body fat. Massage is of no value whatsoever in the treatment of obesity. It has been shown by very careful metabolic studies that long-continued massage of the whole body exercises no greater influence upon metabolism than opening and shutting one hand energetically a few times.

HYDROTHERAPY.

Hydrotherapeutic measures are useful for several reasons. Cold baths, especially when combined with friction, cause a considerable loss of heat from the surfaces of the body and hence stimulate the organism to increased heat production with consumption of body fat. Hot baths act chiefly on account of their diaphoretic action and are synonymous in their effect with any other sweating procedure. The condition of the nervous system, of the circulatory apparatus, of the bronchi and of the skin must always be carefully considered when advising the use of hydrotherapeutic means, and the same counter indications to their employment in obesity exist as in any other case of cardio-vascular, renal or respiratory disease.

THYROID THERAPY.

The medicamentous treatment of obesity is of very subordinate importance. The complications occasionally call for drugs, but for the re-

duction of obesity only one remedy can be effectively employed, namely, thyroid gland preparations. The use of thyroid in obesity at one time was very popular, and this remedy has been carefully tested for several years. Its effects are always uncertain, some obese subjects reacting to the administration of the drug by a rapid, sometimes almost alarming, loss of flesh, others not reacting at all. The effect of the drug, moreover, is not permanent; for as soon as its use is discontinued the patients rapidly regain the lost fat; besides, it is not without danger, especially when used indiscriminately by the laity; for the syndrome of thyroidism, manifesting itself in a variety of disagreeable symptoms about the nervous system and the circulatory apparatus, is always to be dreaded. Cases are on record, moreover, in which the use of large doses of thyroid extract produced glycosuria. In view of the fact that there is an intimate pathogenic relationship between obesity and diabetes, this is particularly to be feared; for occasionally it seems that a true diabetes mellitus was precipitated by the use of thyroid extract. Generally speaking, the use of the drug is superfluous, because obesity can always be reduced if the dietetic regulations discussed in the preceding paragraphs are conscientiously carried out. The only real benefit that might occasionally accrue from the use of thyroid would be to produce a rapid loss of flesh in the beginning of a reduction cure and in this way to exercise a strong suggestive effect upon the patient, thus giving him confidence in the efficacy of the measures employed for his relief; but even this suggestive effect can, in most cases, be equally well produced by the restriction of water drinking or by energetic sweating without, at the same time, doing the patient any harm.

100 State Street.

DISCUSSION.

Dr. Arthur R. Elliott, of Chicago:—I have very little to say except in thorough agreement of what the doctor said in his exposition of this subject, a subject which is not, considering its importance from the standpoint of its value in relation to organic disease, sufficiently often brought forward in our meetings. Dr. Croftan spoke of the value of the reduction treatment in the cure of nephritis, of nervous diseases and cardio-vascular disturbances. In my blood-pressure observations I have been able to demonstrate a fact well understood by those who have followed out blood-pressure observations in a routine way: that we observe very much higher blood-pressure readings in those who are obese, as a rule.

In some fifteen nephritics observed in a routine way as regards blood pressure, I have found that the average weight was 186, whereas in those who weighed within the average normal for their height the blood pressure ranged considerably lower than when obesity was present. This has been observed by various observers. Griesbach some time ago published his observations in regard to blood pressure in obese subjects. He made routine examinations and was able to demonstrate polycythemia and actual blood pressure in quite a marked proportion of them. He called these cases of polycythemia hypertonica. The blood pressure in these persons was very high, and a large percentage of cerebral hemorrhages occurred among their number. It is undoubtedly true that in cases showing cardio-vascular changes the element of obesity plays a very important part in the therapy, especially in nephritis.

One of the first considerations in the treatment is to direct attention toward the reduction of excessive flesh. Dr. Croftan very ingeniously reviewed the essential principles in the treatment of obesity. Unfortunately the quantitative dietetic

measures best adapted for the cure of these patients do not at all secure the end desired. Obesity is nothing more than an error of diet. In many cases it might be termed a morbid disposition to lay on fat, and we find such subjects increasing in weight, notwithstanding the fact that the caloric value of the food is low and that the quantity or bulk of the food is also small.

These cases possibly do not offer the same favorable material for quantitative diet and treatment as do cases in which there is excessive hypernutrition.

Dr. M. S. Marcy, of Peoria:—The essayist has certainly given us a very interesting paper, but there is one thing that he lacks: he has never been fat, hence can not speak from personal experience, but only from observation. This is a very serious question for the patient. It is not always a question of how much a person eats. As a rule you will find that persons after they have become obese are much smaller eaters than are the small, slender individuals, who are apt to be good eaters, although they are not taking on fat.

If I were going to advise a patient about the diet, as I do sometimes, I would suggest something else than what Dr. Croftan suggested. He advised giving large quantities of clam broth, which is of no nutritive value, and not to drink water. If you allow a patient to drink all the water he wants before meals he will not eat so much, and then he will not take on so much fat. I know that some people believe that drinking water will make them fat. Many people think that they must eat and drink until the stomach is full. Let those people fill their stomachs with water first and then they will eat less.

The one important thing about it all is graduated exercise. I think you can safely tell a person to eat what he wants, eating moderately, but you must compel that person to take exercise, beginning gradually, increasing it a little every day until you have them walking ten or fifteen miles a day. Follow this exercise with a vigorous rub-down and a cold sponge bath and you will do them a great deal of good. I am firmly convinced that exercise is the keynote to reducing flesh.

Dr. J. H. Hollister, of Chicago:—Not only the quantity of food but the manner of eating is of importance. I think we shall more and more find benefit arising from the manner in which we introduce food into the stomach. It was my privilege some fifty years ago to observe with others Alexander St. Martin, the celebrated case on which Dr. Beaumont made his experiments with reference to nutrition and the methods of introducing food into the stomach. We made experiments on that man for about two weeks. Beaumont's patient was not satisfied sufficiently by the simple introduction of nitrogenous food into the stomach through the artificial orifice, unless afterward there was mixed with it a sufficient quantity of secretion from the glands of the mouth. When we introduced a bit of rubber into the mouth and let him chew that for about five minutes and swallow the salivary secretion, the saliva, when mingling with the food, satisfied him, and we learned that mastication and salivary secretion are the essential means of satisfying hunger rather than the quantity of food. I have emphasized that fact repeatedly when prescribing to my patients. I have urged them to thoroughly masticate and insalivate the food, and then swallow it before introducing any more. They will derive more benefit from their food in that way; they will not require so much food and there is no danger that they will become fat.

Dr. R. W. Webster, of Chicago:—There are two or three points to be mentioned in connection with this paper. The first point is the fact that we have three well-known and tested methods of reducing fat, the first being the lowering of the diet with a normal amount of exercise, the second the increasing of the exercise with the normal diet, and the third being a combination of these two. Dr. Marcy has spoken of the fact that exercise is of importance. It seems to me that in certain cases of obesity exercise can not be used at all. We are all familiar with the fact that obese patients, especially in the later stages of obesity, are very prone to have heart lesions, which means that it is impossible to increase the exercise for the purpose of reducing the flesh.

Dr. Marcy says obese patients are very small eaters. It is just those patients who are small eaters in whom we often find a very close relationship between the carbohydrate and the fat metabolism. Carbohydrates reduce fat, and fat reduces

the carbohydrates in the system. For this reason a close relationship exists between obesity and preliminary diabetes. In three cases that I have observed in the Cook County Hospital, cases of obesity, the diet was very small, yet these patients showed marked glycosuria. Nearly all these patients later manifest typical phases of diabetes. We are all familiar with the lithogenous obesity and the diabetogenous obesity, which were not referred to by Dr. Croftan.

Dr. W. S. Bouton, of Waukegan:—I want to say a few words regarding the use of thyroid extract in the treatment of obesity. Some time ago I was called to a patient who was having rheumatic attacks. There was no valvular disturbance, no irregularity of the pulse, although it was rather weak and rapid. I did not consider the rheumatic attacks as being cardiac in their nature. The patient was very stout. She was of ordinary height, but weighed about 200 pounds. She was very anxious to have her weight reduced. I concluded to try the thyroid extract, and the result was that the woman lost twenty to thirty pounds inside of two weeks. There also was a decided improvement in the rheumatic attacks and in the rheumatoid pains from which she suffered. There was probably some fatty infiltration of the heart, and the heart was relieved by the absorption of the fat. The woman was also very much improved in health. This may be an exceptional case, but the results I obtained were sufficiently good to induce me to use the thyroid extract again in a similar case.

Dr. L. H. Mettler, of Chicago:—I was unfortunate in not hearing the whole of Dr. Croftan's paper, but two remarks he made impressed me very much, because they are in line with my own ideas regarding obesity. He said that the popular belief that these stout patients, as a rule, are the most physically and mentally calm and the most easy-going people, did not fall in with his own observations. I have noted the same thing, and I think it is a mistake to suppose that the nervous system of these people is any more quiet than that of any one else. There is no reason why it should be so. Dr. Elliott made the statement that obesity is the result of something more than a dietetic fault; and, putting all things together, it seems to me that obesity is an affection of a tropho-neurotic character. I would like to inquire whether any one present knows anything in regard to the relationship of general obesity to adiposis dolorosa, in which a nervous condition is associated with the excessive putting on of fat; whether they are both due to the same cause or whether the one is in any way dependent upon the other. We know so little about the etiology and pathology of adiposis dolorosa that we can not dogmatize on it, but it is interesting to note that this condition, which is so distinct and yet in which these trophic changes run along with a distinct neurotic condition, may have a bearing in bringing us back to the question that putting on of fat in certain individuals is something more than the mere question of food. It may be the neuro-metabolic functions of the body that are concerned.

It has sometimes seemed to me that if some of these stout people who want to get rid of their fat were to exercise their brain and nerve forces more the fat would be reduced to a certain degree. I have noticed this among business men after a long period of close study and mental strain. The neuro-metabolism of such a man has been carried on to such an extent that the man has lost in weight.

Dr. W. C. Abbott, of Chicago:—In this characteristically practical paper Dr. Croftan does not intend to cover all the scientific ground. He merely gives us the practical application of common sense to the treatment of disease. Laying aside all fine-spun theories, the fat man, whether enviably fat or enviably stout, ludicrously stout or beastly so, either eats too much and works too little or else does not digest and assimilate properly what he does eat. Up to that point we can all agree with Dr. Croftan, and that, it seems, is as far as he intended to take us. It is up to us, as reasonably sensible doctors, to make reasonable application of the common-sense theories as they are presented.

Dr. H. C. Fairbrother, of East St. Louis:—There still seems to be nothing new under the sun. I was expecting something new from Dr. Croftan, but it is the old story. In my experience and observation the one problem is that of diet—

limitation of diet. I have tried it myself and I know whereof I speak. I know absolutely that we may diet away our avoirdupois. I admit, nevertheless, that there are some abnormal cases, only a small per cent., however, that take on flesh in spite of a very limited diet. These cases, however, are greatly in the minority, and the average case of too much fat can be relieved by cutting down the diet, cutting off one meal absolutely, and that takes us into the realm of the nervous system. Limiting the power of the senses, living on a higher plane.

Next to the diet is the use of a cathartic. All our horse-trainers understand this perfectly. They do not bring up any scientific theories for the treatment of the jockey, but they reduce his weight by cutting down his diet and giving him plenty of salts. Those are the two things, the *sine qua non*, in the treatment of obesity.

I would like to have Dr. Croftan tell us how he differentiates the so-called physiologic obesity from an incipient pathologic condition.

Dr. Croftan (closing the discussion):—We must appreciate that obesity is not a disease, but a symptom that may be due to a great variety of different causes. I have not made any attempt to enter into the pathogenesis or the etiology of obesity. In most cases it is due to a general metabolic perversion, which may involve only one or two or all three of the classes of foods that constitute our tissues, viz., the albumins, the carbohydrates and the fats. I should like to add to Dr. Webster's classification that there is a metabolic, clinical trinity, consisting of diabetes, obesity, and gout (or the so-called uric-acid diathesis). These conditions are closely correlated and merge into one another. Obese patients often develop diabetes, and diabetic people become fat, and cases of either kind usually exhibit manifestations of the so-called uric-acid diathesis. In the majority of cases of obesity we are undoubtedly dealing with a deep-seated functional perversion of the protoplasm. We do not know, as yet, what this perversion is due to, but that is no reason why we should not attack it symptomatically. We are dealing with the same problem in diabetes. In diabetes the patient excretes sugar. That is a symptom. If we can cut the glycosuria down, the same factors that determine the reduction of the sugar also, as a rule, determine an amelioration of the other symptoms.

Let me call the attention of the surgeons to the surgical aspect of reducing obesity. Many sufferers from joint lesions are obese; here goutiness and obesity are associated about the lower extremities. We try to relieve the joints by means of orthopedic appliances, from pressure, but surely it is a much simpler, more rational and more effective plan to take fat off these people, hence to reduce their weight and hence secure all that could be expected of an artificial support. It is important not to institute too rapid a reduction cure, because the sudden reduction of intra-abdominal fat often leads to hepatoptosis, knuckling of gall ducts, and in many cases, I believe, to the formation of gallstones.

Another very important point, one not recognized enough, is the occasional development of ventral hernia following rapid reduction cure in obesity. Hence peculiar pains appear in the epigastric region that are generally misinterpreted to signify gastric disease. On careful examination a fat hernia will often be found, which again becomes a surgical condition.

I was immensely impressed with Dr. Hollister's remarks. His observation antedates Pawlow by about forty years and corroborates his conclusions that were arrived at by an immense amount of experimental work.

With regard to adiposis dolorosa, I do not think that there is much relation between that condition and obesity. In the former there is a peculiar distribution of the fat, leading to the formation of lipomata rather than to a general obesity. I had the privilege of seeing a large tumor of the pituitary body removed from one of the first cases of "maladie de Dercum" ever published. It is possible, therefore, since other pituitary tumors have been found in such cases, that there is some relationship between adiposis dolorosa and acromegaly. Tropho-neurotic is as good a word as metabolic perversion. I do not know what either of them means.

If the treatment of obesity were merely a mathematical proposition it ought to be reversible, but it is not. You can not make a pug dog out of a fox terrier; nor can you make of the lean, hungry-looking, ascetic type of man an individual blessed with an enviable degree of fatness.

THE BRAIN A GOOD FIELD FOR SURGERY, AS SHOWN BY ITS DISREGARD FOR TRAUMATISM.*

CHARLES D. CENTER, M.D.
QUINCY.

In these days, when there is practically no doctor too timid to invade the peritoneal cavity, it is astonishing to observe the reluctance, on the part of these same peritoneally brave operators, toward attempting any operation on the brain. There are several reasons for this state of affairs, each of more or less weight. There is, first, fear of attacking a so-called vital part, the same fear there would be in attacking a surgical condition of the heart. Then, there is the history, as given by statistics, of less brilliant results from the brain surgery. Next, the greater difficulty in locating the particular point of disease or injury in the brain as compared to the abdominal cavity, or, in other words, the greater uncertainty in diagnosis of cerebral and cerebellar conditions, especially among the members of the rank and file of the profession. The abdomen has become an open book, and even he who runs may read, and some who read with difficulty unhesitatingly do laparotomies that the deficiency may be overcome by sight and touch. The brain, on the other hand, calls for accuracy in diagnosis, for one does not feel like removing enough of the calvarium to allow introduction of the entire hand for diagnostic purposes, and brain convolutions can not be pushed aside, or pulled out, like the coils of intestine, to allow the eye to assist in the search for the hidden trouble. This weakness in diagnosis produces a distaste for operation by selection, and usually delays the operation until, if it is made, it is made from necessity. These considerations, taken as a whole, have led to the production of this paper, and an effort will be made to show that the brain is a good field for surgery, for early surgery, and for bold surgery.

There are many cases of brain injury on record where the patients, with or without operation, made seemingly miraculous recoveries. These recoveries are at once so numerous and so apparently wonderful that but one conclusion can be drawn, and that is that the brain is an insensitive, long-enduring structure. Furthermore, when these cases are classified, one must decide that by far the greater portion of the brain substance and brain area is not a vital part of the human anatomy; also, that focal symptoms arising from injury or operation need not be permanent. Still further, in death from brain injury the majority of the patients die from sepsis or from pressure resulting from the injury rather than from the injury itself. There has been no attempt to form any long list

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of cases of extensive brain injury, where, with or without operation, the patient recovered, but, to prove the point that by far the larger portion of the brain need not be considered vital, let me cite the following cases:

Lawrie (*Scot. Med. and Surg. Jour.*), a gunshot wound of the occipital lobes, with recovery.

Drew (*Brit. Med. Jour.*), gunshot wound of the motor area, operation and removal of the ball after five days, recovery.

Rehn (*Centralb. f. Chir.*), gunshot wound, ball in the cavernous sinus, removed on the sixth day, recovery.

Mingus (*Am. Med. Jour.*), two compound comminuted fractures, involving the vertical portion of the frontal lobe, the orbital ridge, the orbital roof, the great wing of the sphenoid, the horizontal plate of the ethmoid and the right parietal bones. Complete destruction of the left frontal lobe of the brain. Lived nine days.

Pope (*Am. Med. Jour.*), attempt at suicide by driving nail in brain. A three-inch nail was driven in full length in suture between parietal bones. Pus followed withdrawal of the nail. Recovery.

Lindsay (*Jour. A. M. A.*), gunshot wound passing from temple to temple, recovery.

Baldwin (*Columbus Med. Jour.*), injury opening the lateral ventricle, recovery.

Binkley (*Nashville Jour. M. and S.*), gunshot wound of motor area of brain, recovery.

Bloxam (*Lancet*), gunshot wound, laying bare and traversing the brain. Ball removed from temporal fossa on opposite side. Recovery.

Nancrede (*Phil. Med. News*), gunshot of anterior lobes. Ball deflected by base of skull. Recovery.

Parsons (*Brit. Med. Jour.*), gunshot wound of cerebral hemispheres, with hemiplegia. Complete recovery.

Evans (*Am. Jour. Surg. and Gyn.*), piece of wood removed from floor of skull, after 32 years *in situ*. Knife blade removed from left frontal lobe after 18 years *in situ*. Recovery.

Bell (*Brit. Med. and Surg.*), gunshot wound of head, the ball entering the temple just back of the orbit and emerging on the opposite side of the head. Recovery, with loss of sight on the side of entrance.

I will refer also to a case of hemorrhagic encephalitis, reported by me at the last meeting of this Society in this city. This case had extensive destruction of brain tissue, due to the tremendous intracranial pressure and to the punctate hemorrhages. It was estimated that at least one-fourth of an ounce of gray brain substance escaped when the operation opening was made. This case recovered completely.

In the *Index Catalogue* of the office of the Surgeon-General, U. S. A., I find recorded thirty-four cases of extensive brain injury, mostly gunshot wounds, where the patients recovered. From the summary of statistics compiled by the *Boston Med. and Surg. Jour.*, subsequent to the Spanish-American war, I quote the following: There were but seven recorded cases of trephining for gunshot wounds of the head. Perforating wounds

of the brain, if not immediately fatal, are recovered from without operation in the majority of cases. Quoting also from Senn's admirable medico-surgical history of the Spanish-American war: "To my own knowledge, a number of gunshot wounds of the head that survived long enough to be transported to the general hospital at Siboney died within twelve days of the receipt of the injury. In all of the cases, intracranial infection was the immediate cause of death. Encephalitis and leptomeningitis constituted the fatal complications."

Before relating my final case to prove my point, let me give a working formula for brain surgery. Barring accidents to blood vessels, with consequent pressure from blood clot, aseptic surgery of the brain, done before inflammation has begun, is safe surgery anywhere in the cerebrum outside and beyond the corpus callosum. In other words, the corpus callosum marks the dividing line between safe and more unsafe surgical procedures.

This is the history of B. D., male, age 10 years, suffering from a gunshot wound of the head from a 22-caliber rifle ball. The ball entered the head on a level with and one-half inch to the right of the occipital protuberance, and, as the boy was running forward, it is likely that the course of the ball was, at least, a little upward. The case did not reach my hands until three days after the injury, but the history shows that the child never became entirely unconscious. Immediately, or at least very soon after the injury, it was discovered that he was totally blind. On the third day, when I saw him, he had a temperature of 103° F., intermittent pulse, unequal pupils, was semi-comatose, had no use of the right hand, but could move the arm, perceptive faculties extremely sluggish, incontinence of urine, and an infected bullet tract. The wound had been probed, so a drain was passed up, following the direction which a 22-caliber bullet probe took. This drain was inserted for a distance of two and one-half inches. For about a week the case improved in every way, except vision and the focal symptoms of the right hand. Then the temperature rose again, hernia cerebri developed, and the boy complained of more pain, always referring the pain to the right frontal eminence. This point was the point directly opposite the point of entrance, as shown by the direction taken by the bullet probe, and as would be expected from the history of the position of the patient when shot. Thinking that the ball might be lodged at this point, and might be the cause of an anterior infection, an operation was done the fourteenth day after the injury. The chiseled opening at the right frontal eminence disclosed blood clot and broken down brain tissue, but no bullet. The point of entrance posteriorly was then enlarged, and the bullet probe passed boldly along the tract of the ball for a distance of five inches. Anteriorly, a thin grooved director was used in four directions searching for pus. None was discovered anteriorly, but the probe from behind opened a pocket from which a drachm escaped. Gauze drainage was used anteriorly and a five and one-half inch rubber tube posteriorly. The patient was put to bed in a condition as good or better than before the operation. I say "or better," because he had exhibited sighing respiration continu-

ously since the injury, and this symptom disappeared after removal of the pressure anteriorly and the drainage of the abscess posteriorly. The drainage in front was removed the fifth day. The tube in the posterior wound was in place for eleven days, and the channel and cavity were irrigated daily. During irrigation, as the pressure within the brain increased, the sighing respiration would become evident. In about ten days after the operation the boy could distinguish light from darkness, and sight, once established, improved rapidly. One curious phenomenon was his inability to judge distance. He would try to reach some article on the other side of the room, thinking it was within reach, or, if a cup of water was offered him within easy reach, he was quite likely to pass the hand the full length of the arm beyond the cup, nor could he tell, as he looked at the cup and hand, which was the nearer to him. He had, for a time, double vision and magnification and confusion of color sense. The further recovery of the case was wholly uneventful, all functions being completely restored. In submitting skiagraphs of this case, taken one year after the injury, you will notice several points of interest: First, the ball lies on the left side of the head, apparently just internal to the arm center of the Rolandic area on this side. I believe that it was disturbance of circulation in the arm and hand center, rather than an actual pressure from the ball or destruction of brain tissue, that caused the right arm paralysis. The skiagraph shows also the point of opening at the right frontal eminence. There is no doubt that the ball impinged at this point, and, striking a round surface of bone, was deflected to the left. The richochet has left it on the opposite side of the head from which it entered. Fluhrer and Delbet have noted richochet, with the deflected bullet taking a secondary course.

Following the course of this ball, we find that it passed through the right occipital lobes of the brain, the vision center. It then left the cortex, passing internal to the ascending parietal convolution, the center for movements of the fingers and wrist. It evidently passed internal to the centers for the hand, mouth, lips and tongue on the right side of the brain, for while all of these centers, as well as that for hearing, were disturbed there was no loss of function at any time, but rather a retardation of function. The frontal convolutions, which must have been traversed twice, gave no functional evidence of destruction, i. e., there was no disturbance of the lateral motion of the head or eyes, nor of the elevation of the eyelids. The ball must have traversed a plane just a trifle superior to the corpus callosum, thus passing external to the right lateral ventricle. In this case it was evident there was but little disturbance created by the destruction of arteries, for there were practically none of the usual symptoms attendant on brain pressure from blood clot, except that caused by the anterior hemorrhage, which manifested itself by the pain sense and by the sighing respiration. Reasoning, then, from this case, and from the others referred to, I can not help thinking that the cerebrum offers a good field for safe surgery, and that such work done early and under the usual aseptic precautions will give as brilliant results as are now obtained in the abdomen. I will go still further and say that a deferred

operation for brain injury subjects the patient to the unnecessary risk of sepsis, and that an operation then is an operation under disadvantageous circumstances. The day is coming when a perforating wound of the brain will call for immediate operation to establish drainage or to make needed repair, just as a perforating wound of the abdomen now calls for immediate laparotomy.

DISCUSSION.

Dr. Carl Beck, of Chicago:—The case reported by Dr. Center is certainly a very interesting one, and he is to be congratulated on the result of this operation. Unfortunately, the broad field of surgery of the brain has been greatly limited within the last two years, and, while we were very enthusiastic in former years as to the results to be obtained from operations on the brain, we have become more and more conservative in brain surgery, and the objections to it are those that he has mentioned in the preliminary part of his paper. I think as the cases become more numerous in the doctor's observation he will become a little more conservative also in brain surgery. Especially favorable, however, are the traumatic cases. Less favorable are those where we would enter the brain before we have established a diagnosis. In a fresh traumatism like this we have not much time to lose, on the one hand, in establishing an exit for the infected wound secretions. On the other hand, the best possible result may be obtained from operation performed early, with restoration to an almost normal condition.

With other pathologic conditions, tumors, etc., which cause complicated symptoms, the diagnosis is difficult, and after cerebral localization has been established very often the result from total removal is not gratifying. While the results in cases that were operated on at first were seemingly excellent, as the years have gone by the symptoms have gradually returned, and many patients, while not worse, probably are in about the same condition they were before operation.

Dr. W. F. Grinstead, of Cairo:—I have been much entertained by Dr. Center's paper on brain surgery. I believe the paper is very timely. For the last year or two I have often thought of it as he has presented it. The importance of the subject lies more in connection with injuries than diseases of the brain. I believe we can do more good in brain surgery by careful attention to brain trauma than we can to brain tumor or to conditions of the brain that have resulted from changes which have followed neglected injuries. If injuries to the brain are not treated promptly, permanent damage may be done, for which there is no remedy. Changes may take place in the brain structure as the result of long-continued compression, as a result of pressure either from bone or from clot, which may not be absorbed and which may undergo cystic degeneration; whereas if the case had been promptly treated, without fear, as suggested by Dr. Center, perhaps no permanent disability of importance would have resulted.

Dr. Center (closing the discussion):—I fully indorse everything Dr. Beck has said. There was nothing in my paper which conveyed the impression that I would advocate brain surgery for all of the brain conditions that might arise. At the present time I have one case of unquestioned brain tumor that I am not going to operate on, and there is no doubt as to the localization and character of the tumor, because the man gave a direct specific history, in the first place, and in the second place the gumma is sufficient to cause some of the bulging of the skull, so that I know where the tumor is situated. Therefore, for the reasons given by Dr. Beck, I have felt some hesitation in operating. The intent of my paper was to try to remove the fear which has existed over early operations following traumatism. If the paper has done any good in this way I am entirely satisfied.

RHEUMATISM.*

BENJAMIN BACHRACH, M.D.
DECATUR.

This one word implies a multitude of meanings. There is not a day that passes but some one will tell you he has the rheumatism. Many know they have it, because they have pain; many know it, because they have been told so; many have been treated for their troubles with salves, liniments and "anti-rheumatic" remedies; some carry a potato in their pocket or wear a cord about their waists. Not long ago an old man told me how much benefit he had obtained from rubbing coal oil on his legs every night, and there are many people who wear those wonderful "electric belts," a sure cure. There is no end to the list of cures that the laity have for rheumatism. You who see rheumatism in all its forms have become lax in diagnosing the several varieties and, of course, the treatment often fails. There is nothing which seems easier to treat and yet is harder to combat than rheumatism, often because of the improper classification of the disease.

MUSCULAR RHEUMATISM AND CHRONIC ARTICULAR RHEUMATISM.

By chronic rheumatism we understand an inflammation and hyperplasia of fibrous tissue, especially the fibrous tissue of the muscles, fasciæ, tendons, ligaments and nerve sheaths, which gives rise to pain. Chronic rheumatism must be distinguished from the transient attacks of subacute rheumatism, which are frequent in rheumatic subjects, from rheumatoid arthritis, myalgia and old traumatic lesions. Chronic articular rheumatism does not lead to fibrous ankylosis, and if, when a joint is examined, there are found firm, fibrous adhesions between the bones, then the probability is that the original is either rheumatoid arthritis or gonorrheal arthritis.

Symptoms.—Complaints of rheumatism in muscles and joints are extremely common in middle-aged persons. The pains and stiffness are commonly attributed to changes in the weather, to chill, damp, cold northerly or easterly winds or overexertion. If the joints be affected, no alteration in their appearance is to be noticed, the patient complains that the joint is stiff and painful in movement. There may be a dull aching pain, referred to the joint, worse at night or with damp or cold weather. The symptoms of muscular rheumatism are more marked and distinctive. The onset of pain may be sudden, and any movement of the muscle greatly aggravates it; the affected muscles are tender and occasionally in a state of spasmodic contraction. The patient complains of stiffness in the affected regions or all over the body, and there is a general feeling of weariness. The period of sharp pain and tenderness in the muscles soon subsides, leaving a dull, aching feeling and stiffness which may last for a long time. The stiffness is most marked on first rising in the morning or when getting up from a stooping or sitting pos-

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ture. The acute pain in the muscles not infrequently comes on at night and is aggravated by heat.

Treatment.—In the acute stage of muscular rheumatism, when the pain and tenderness are extreme, the administration of salicylate of soda or aspirin in doses of fifteen grains every three or four hours will in the majority of cases afford relief. In obstinate cases antipyrin should be tried or morphia hypodermically if necessary. In muscular rheumatism a calomel purge, followed by Epsom salts or Seidlitz powder, should be given at the onset. The parts should be kept at rest in the acute stage and warm fomentations applied, covered with methyl salicylate or liniments of chloroform and belladonna. After a few days, massage should be given; the diet should be light. Chronic muscular rheumatism is little influenced by drugs. Quinin, potassium iodid, alkalies, guaiacum and sulphur are the most efficacious. Massage is the most important therapeutic agent and should be combined with active and passive movements and with daily application of faradic current for five or ten minutes. Where skilled massage is not available, daily rubbings with a stimulating liniment should be tried night and morning; local counter irritation may be tried, also occasional hot baths, Turkish baths and change of climate.

The pains of true chronic articular rheumatism are not much relieved by salicylate. Sufferers from chronic and muscular rheumatism should make every effort to improve the general health by exercise in the open air, the bowels should be regulated by the administration of cascara sagrada or compound liquorice powder and occasionally a little calomel. If the tonsils are large or chronically inflamed they should be removed. Warm underclothing of wool is important, cold and damp should be avoided. The diet should be carefully regulated, the food should be plain, and the quantity of carbohydrates, sugar, sweets and potatoes must be limited. The amount of fluid should be in excess of normal and taken on an empty stomach. A glassful of hot water before breakfast and on going to bed and half a glassful half an hour before the noon and evening meal should be taken. A warm, dry, inland climate is the most desirable.

ACUTE ARTICULAR RHEUMATISM.

Definition.—A specific acute infective fever characterized by sweats, shifting inflammatory changes in the joints and related structures in the heart and in the serous membranes.

Age.—Rheumatic fever is essentially a disease of childhood and young adult life, it being rare in children under 1 year of age and uncommon after 50.

Sex.—Adult males are more subject to the disease than females, it being almost twice as frequent in males, due, perhaps, to the more exposed nature of their work and to manual labor, which lays a certain strain upon the joints.

RACE, CLIMATE AND SOIL, INFLUENCE OF SEASONS.

Athough acute rheumatism may occur in any variety of climate and soil, it is more prevalent in subtropical and temperate climates and in

countries which have wide variations of temperature in the course of twenty-four hours. People who live in the city seem to acquire the disease more than those who live in the country. The colored races are less subject than the white. The common belief that rheumatism is more prevalent in the colder and wetter months is probably due to the fact that the pains of chronic rheumatism and rheumatoid arthritis are more troublesome at these periods.

Bacteriology and Pathology.—The usual initial seat of invasion by the organism is the tonsil and fauces; the diplococcus enters the blood stream and is distributed to all parts of the body, but it has a special affinity for the fibrous tissues and serous membranes. There is a difference of opinion as to the bacteriological cause of rheumatic fever, many believing it to be due to a diplococcus, while others assert that it is of a streptococcic origin. The consensus of opinion points to the diplococcus rheumaticus as the specific cause. The structures most affected in the joints are the fibrous and serous structures, such as the synovial membranes, tendons and ligaments. There is an excess of fibrinous exudation into the joint.

Symptoms.—The onset of rheumatic fever may be sudden or gradual. Generally, after a few days of malaise, the patient complains of pains and stiffness in the limbs and back and slight shivering. There is often a complaint of sore throat. Gradually, the pains become localized in the joints, passing from one joint to another and a definite arthritis is established. The patient lies helpless in bed, unwilling to move, the temperature rises to 102° or 103° Fahr. There is a profuse acid sweat, a coated tongue and constipation. If the salicylates be now administered for a few days, the temperature falls to normal and the attack after perhaps one or more relapses comes to an end. While this may not be true of a mild attack of acute rheumatism, the course of the disease may be very different; there are few diseases in which both the local and general symptoms may be more severe and intractable, or in which the complications and sequelæ may more seriously endanger the life of the patient.

Joints.—The joints most prominently attacked are, in order of frequency, those of the knees, shoulders, ankles, wrists, fingers and elbows. There is swelling due to effusion within the joint; the pain may be slight or severe and is increased on movement. A characteristic feature of arthritis is its tendency to move from one joint to another. The symptoms subside in one joint as they appear in another, but, as a rule, several joints are implicated together. The symptoms are aggravated at night. After subsidence of the attack, some stiffness and swelling may remain in the joints. The temperature is of irregular, remittent type. The skin is bathed in an acid perspiration; there is a loss of appetite and constipation. The most serious complications are those affecting the heart, such as diseases of the valves, pericardium or myocardium. The onset of heart involvement is slow and can only be diagnosed by carefully watching the pulse, temperature and daily examining the heart with the stethoscope.

Treatment.—(1) Place the body at rest so that the minimum amount

of strain is likely to be thrown upon the tissues most likely to be affected, such as the heart, joints and muscles. (2) Reduce pyrexia and relieve the painful arthritis by means of general and local remedies. (3) Guard against cardiac inflammation. (4) Give a careful diet. Daily sponging with hot water should be practiced to keep the skin clean, and the salicylates should be given, for it is generally agreed that they shorten the febrile period and relieve the arthritic pains. Sodium salicylate with sodium bicarbonate should be administered in 20 gr. doses every two hours for twenty-four and then every four hours for several days, care being taken not to produce salicylism, when the drug must be stopped for a time and perhaps some of the substitutes tried. Aspirin may be administered in 15 gr. doses every two or three hours. The bowels should be kept open, and if the pains are not relieved by salicylates an occasional dose of morphia should be given. Tonics should follow during convalescence. The joints should be wrapped in cotton or wool and lightly bandaged. Heart lesions require special treatment. Hyperpyrexia is best controlled by cold sponging. The diet should be liquid for the first few days and then gradually increased, but little or no meat given.

RHEUMATOID ARTHRITIS.

Spender, in Clifford Allbutt's "System of Medicine," gives the following definition of this disease: "A progressive degeneration of joints of a special kind, accompanied by atrophy of some structures and hypertrophy of others. The course of the disease is variable, but is ordinarily toward irrevocable damage and ruin of the structures involved." The division of the disease into an acute and chronic variety is hardly warrantable and we can only look upon it as being of a chronic nature. The disease is rare in children, commencing principally in adults between the ages of 35 and 50, and is more common in women than in men. Cold and dampness are productive of the disease, especially in those who have recently suffered from some infective disorder or a disturbance in the nutrition. The joint changes are partly inflammatory and partly degenerative, the synovial membrane is thickened and hypertrophied and masses of detached cartilage may be found in the slight excess of synovial fluid. At the edge of the articulation there is a new formation of cartilage in nodular masses, and plates of cartilage may form in the ligaments or in the capsule of the joint; the bones where the cartilage has been eroded become hard and eburnated on the surface, and may develop ridges and grooves, when in contact with other bones; at the edges of the articulation the formation of new bone gives rise to lipping, and the original shape of the articulating surface may be entirely changed. True bony ankylosis is exceptional. The ligaments of the joint undergo fatty degeneration and the muscles show signs of atrophy.

The two theories with regard to the causation of rheumatoid arthritis which predominate to-day are those which attribute it either to a nervous or to an infective origin. The three most prominent features in connection with the causation of this disease are the inheritance of an arthritic diathesis, a condition of malnutrition and debility, and the presence

of a toxic focus, the latter of which can nearly always be elicited in procuring a careful history of the case. The joints most frequently attacked are the small joints of the fingers, metacarpo-phalangeal and wrist joints, the knees and ankles. The disease generally begins in the peripheral joints and spreads to those nearer the trunk. The onset of the disease is insidious, beginning with a constant gnawing pain, progressive stiffness and deformity of the joint, which becomes shapeless and crippled. Dislocations may exist and the parts involved may be deflected out of their usual positions. The wasting of the muscles is, in part, responsible for the increasing immobility of the joints, which is also due to the bony outgrowths and the thickening of the fibrous structure. Any attempt at movement causes pain and a creaking, crackling or grating may be both felt and heard over a joint. Rheumatoid arthritis is never a fatal disease and the prognosis centers around the progress of the disease and the extent of the crippling in the joints.

The disappointing results which so often reward the most careful treatment of rheumatoid arthritis are due to the fact that the treatment is undertaken too late and that during the early stages the arthritis has been treated on wrong principles. A common mistake is to attribute the arthritis to a strain or other accident and to treat the local condition altogether apart from the general constitutional state. It is only when other joints become involved that the condition is recognized and the general symptoms of rheumatoid arthritis are found to exist. We ought to suspect the existence of the disease whenever a chronic arthritis results from some trivial strain, and more especially if the joint conditions persist in spite of the usual remedies.

In order to effect an absolute cure in rheumatoid arthritis there must be early recognition of the disease and the discovery of the source of infection which is capable of removal. This seeking out of a primary focus of infection and its correction is the first and most important step in the treatment of rheumatoid arthritis. Cases that have no toxic center and are of rheumatic origin are the most difficult to deal with. Care should be exercised in the diet of the patient and an increase of the nitrogenous and fatty constituents is advisable, such as meats and milk. Vegetables and fruit may be taken freely. The clothing should be warm; exercise in the fresh air is essential when the weather permits.

Rheumatoid arthritis is not directly controlled by drugs; guaiacol carbonate in milk, 5 or 10 grains, three or four times a day, is one of the best remedies if continued for some time; sodium salicylate and aspirin in full doses often aid in relieving the pain, as will also antipyrin. Tonics, such as cod-liver oil and iron preparations, may be given with much benefit. Local applications act only as palliative agents. Massage and baths do much good and they should always be given with much care and attention, as they improve the patient's general nutrition and the amount of muscular wasting is reduced. Electrical treatment is of much service. It arrests the progress of the disease and ameliorates the general and local conditions; there is increased mobility, freedom from pain and improvement in the general health after careful electrical treatment.

GONORRHEAL RHEUMATISM.

Gonorrheal rheumatism, as the name implies, is due to a systemic infection from the gonococcus and manifests itself by a subacute or chronic arthritis of one or more of the larger joints, particularly the knee or ankle joints. A more or less recent history of urethritis can always be elicited in these cases, but the third or fourth week of disease seems to be the time when the onset of arthritis is most common. The first symptoms of joint involvement are pain and disability; swelling follows within a few hours, at first from serous effusion into the synovial membrane, and later from a diffuse edema of all periarticular structures. Ankylosis of joints is not infrequent in gonorrheal rheumatism. It is particularly likely to follow acute cases of the polyarticular variety. Although only fibrous in nature, the adhesions are very firm and may lead to serious crippling. The first and most important point in treatment is the cure of the urethral discharge. The arthritis can then be treated by rest, bandaging, etc. The salicylates and other drugs have little or no effect on the disease, except in relieving pain. The usual dietary should be given especial attention in these cases.

Conclusion.—It has been my endeavor in taking up the "rheumatic diseases" as I have, to emphasize the necessity for a careful and scientific diagnosis of every case of rheumatism that comes to our notice. If we expect to get results with these cases we must first make a satisfactory diagnosis, then treat the case with that care which it demands.

VIOLENT DEATHS IN CHICAGO.

A Statistical Study.

Thomas Grant Allen, A.M., M.D.
CHICAGO.

Under the head of violence, in most tables of vital statistics, are included not only such violent deaths as suicide and homicide, but the deaths due to accident and mishap as well, such as railway and street-car accidents, burns, drowning, explosions, gunshot wounds, suffocation and sunstroke. In examining the vital statistics for Chicago for the past five years,

TABLE 1.—Deaths from All Forms of Violence.

Year.	No. of deaths.		
1905	2,107	Total 1903-5	6,709
1904	2,014	Total 1904-5	10,346
1903	2,588	Total 1904-5	4,121
		Average for past 3 years	2,236
		Average for past 5 years	2,069
		Average for past 2 years	2,060

one is struck by the large number of deaths reported as due to violence. In 1905, the number was 2,107, in the previous year 2,014, scarcely 100 less, while in 1903 the deaths from violence reached the enormous number of 2,588. The total for the last three years, therefore, is 6,709, and for the past five years the total is 10,346. The average annual violence mortality for the past three years was 2,236. The figures for 1903, however, include the 561 deaths due to the Iroquois Theater disaster, and it

may seem that we would get a truer estimate of the average yearly sacrifice in Chicago by taking the average of the past five years. This would give an annual violence mortality of 2,069. If we leave 1903 out of our calculation and take the average of the past two years, 1904 and 1905, we find the average violence mortality to be 2,060, or almost exactly equal to the average of the past five years, including the Iroquois Theater horror.

TABLE 2.—TWO THOUSAND DEATHS FROM VIOLENCE EVERY YEAR IN CHICAGO MEANS:

1 violent death for every 950 living.
1 violent death for every 13 deaths, all causes.
1,058 violent deaths for every million of population.
6 violent deaths every day.
40 violent deaths every week.
4 Iroquois Theater disasters every year.

We may safely place the average annual violence mortality of Chicago, then, at 2,000, and we need not expect the number to fall below this again, unless we, as physicians, pay more attention to this matter than we have heretofore.

What does it mean to say that there are 2,000 violent deaths a year in Chicago? It means that every year there is one violent death to every 950 living. It means 1,058 violent deaths to every million of the population. It means that every thirteenth death is a violent death, and, if we were to exclude from this calculation all deaths under 5 years of age, then the proportion is about one violent death in every eleven from all causes. Two thousand violent deaths a year means 6 violent deaths every day, 40 violent deaths every week, 50 miles of funerals or 4 Iroquois Theater disasters every year.

TABLE 3.—VIOLENT DEATHS AND DEATH RATES FOR EACH OF THE YEARS 1901 TO 1905.

Year.	Total Deaths from Violence.	Total Deaths to 10,000 Deaths all Causes.	Deaths all Causes to 1 Violent Death.	Violent Deaths to 1,000,000 population.
1901	1,750	717	14	996
1902	1,887	713	14	1,039
1903	2,588	895	11	1,381
*	2,027	715	14	1,079
1904	2,014	765	13	1,042
1905	2,107	774	13	1,058

* Not including the Iroquois Theater disaster.

Is violence increasing or decreasing? Let us see. In the last four years, 1901 to 1905, the deaths from violence have increased from 1,750 to 2,100, or exactly 20 per cent. If this rate were to continue to 1920, our annual sacrifice will then be 3,500 lives.

Now, the population has increased at no such rate. Had the population increased in the same ratio there would have been 996 violent deaths per million in 1905, instead of 1,058. This means that there were 120 more violent deaths in proportion to the population in 1905 than there were in 1901, or, to put it in another way, had the rate which obtained

in 1901 persisted through the five-year period or pentad, there would have been 1,000 less violent deaths.

If, now, instead of comparing the rates per million living, we compare the rates per 10,000 dying, we shall find that, in 1901, the violent deaths were 717 in every 10,000 deaths; in 1904, they were 765, and in 1905 they were 774. This means that, had the rate for 1901 obtained in 1905, in that one year there would have been 155 fewer violent deaths. This same comparison is made in a slightly different way by saying that, in 1901, every fourteenth death was a violent death, while in 1905 every thirteenth death was a violent death.

We conclude, then, that violence mortality has been increasing in Chicago during the past four years and that the increase in proportion to the deaths from all causes is greater than the increase in proportion to the population. This can only mean that the violence mortality is increasing faster than the mortality from all causes.

We are always in danger, however, of drawing misleading conclusions when we compare a single year with another, and especially are we apt

TABLE 4.—COMPARISON OF VIOLENCE MORTALITY AVERAGES FOR STATED PERIODS.

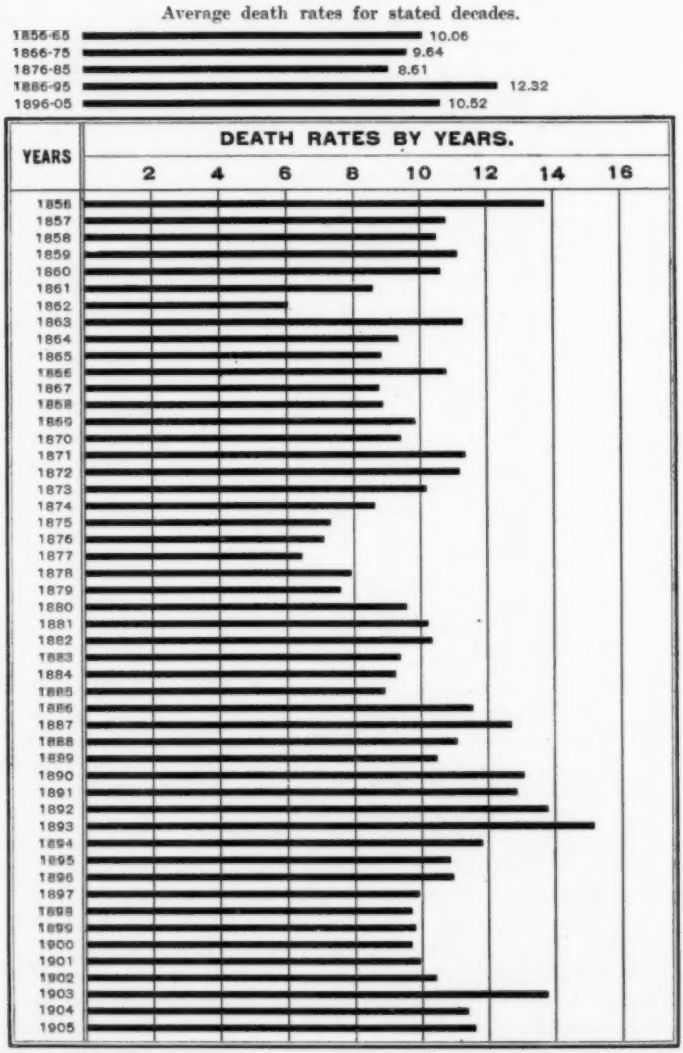
Period.	Average Deaths from Violence.	Violent Deaths to 10,000 Deaths all Causes.	Deaths all Causes to 1 Violent Death.	Violent Deaths to 1,000,000 population.
10 years, 1896-1905	1,814	716	14	1,052
5 years, 1901-05..	2,069	772	13	1,103
3 years, 1903-05..	2,236	811	12	1,160
2 years, 1904-05..	2,060	770	13	1,050
Excluding Iroquois Theater Disaster.				
10 years, 1896-1905	1,758	699	14.3	1,022
5 years, 1901-05..	1,959	737	13.5	1,043
3 years, 1903-05..	2,050	751	13.3	1,060
2 years, 1904-05..	2,060	770	13.0	1,050

to make errors when the two years compared are, as in the U. S. Census Reports, several years distant from one another. One year may be unusually healthful, while the other year may be unusually unhealthful. Similarly, there may be waves of violence, such as the Iroquois Theater and the Slocum disasters. The average for pentads or decades will give us a truer basis of comparison.

To see whether this method would alter our conclusions in any way, I have averaged the violence statistics of Chicago for the past two, three, five and ten years. It will be seen, whether we compare the violent deaths with the deaths from all causes or with the population, that the rate for the past three years is greater than it is for the past five years and that this, in turn, is greater than the rate for the past ten years. If we exclude the Iroquois Theater fire, we find that the rate for the past two years is higher than that for the past three and increasingly higher than the five- and the ten-year rates. So much higher is the rate for the past two than the average for the whole decade that, had the rate for the decade prevailed last year, in that year alone we should have saved 190 citizens from violent deaths.

Undoubtedly, then, violence has been increasing during the whole decade. Has it been increasing for twenty or thirty years? How does

DIAGRAM I.—VIOLENCE.
(ALL FORMS.)
DEATHS PER 10,000 OF POPULATION.

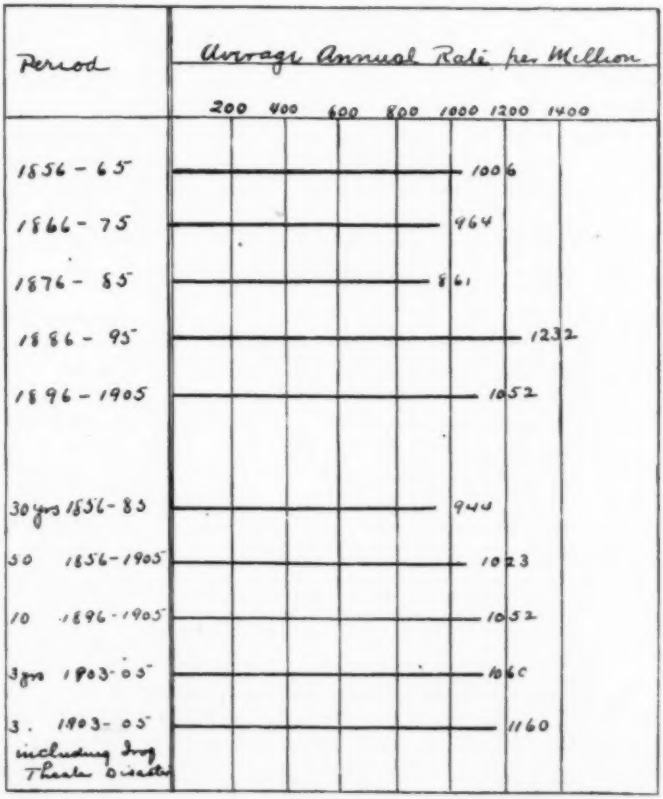


the past decade compare with previous decades in the matter of violence?

Diagram I shows that the violence mortality during the past decade

was less than during the preceding decade, which may be called the World's Fair period. We know that this was a time of unexampled growth of population, of expansion of traffic, of hurried and often unsafe building operations and of many grade crossings. With the exception of this decade, 1886-1895, however, the past ten years, 1896-1905, show

DIAGRAM II.—COMPARISON OF THE VIOLENCE MORTALITY RATES OF THE PAST THREE AND TEN YEARS WITH PRECEDING PERIODS.



a greater violence mortality rate than any previous decade during the past fifty years, and a notably higher rate than the decade next preceding the World's Fair. The violent deaths during the last ten years were 110 per million more than the average of the thirty years ending 1885, higher than the average of the past forty years, and 29 per million higher than the average of the whole fifty-year period. The average of the past three years, as has already been shown, is still higher than this, higher by 137 per million than the average for fifty years.

Again, we notice that for thirty years the rate decreased, then sud-

denly and enormously increased, again fell and again is on the increase. The highest point reached was in 1893, when the rate rose to 1,520 per million, which means that 750 lives were sacrificed in that year alone above the average annual sacrifice for the fifty-year period.

Thereafter the rate declined rapidly to the census year, 1900, when it reached 97, the lowest rate since 1885, when the population was 665,000, or about that of St. Louis or Boston to-day.

We see, then, that the violence mortality rate is now higher than the

TABLE 5.—VIOLENCE MORTALITY IN SIX LARGEST CITIES OF UNITED STATES, 1902.

City.	Population.	Deaths.	Rate.	Violent Deaths.	Per Million.	Per 10,000 Deaths.
New York	3,623,000	67,986	18.8	3,795	1,047	558
Chicago	1,815,000	26,485	14.6	1,980	1,091	748
Philadelphia	1,343,000	23,578	17.6	1,181	879	501
St. Louis	600,000	10,363	17.3	621	1,025	599
Boston	584,000	10,999	18.9	671	1,150	610
Baltimore	524,000	10,255	19.6	508	962	492

average of the fifty years and higher than any part of these fifty years, except the eleven years from 1886 to 1896, inclusive. Is the violence mortality for other large cities greater or less than that of Chicago?

There are three cities in the United States with populations exceeding one million and three others having a population exceeding half a million. These statistics are for the year 1902. For purposes of comparison we note that Chicago is one-half the size of New York, equal to Philadelphia and Baltimore combined and rather larger than St. Louis, Boston and Baltimore combined. The violent deaths in Chicago that year were more than half as many as in New York, more than equal to

TABLE 6.—SHOWING VIOLENCE MORTALITY RATE IN CHICAGO AND IN THE CITIES OF EACH OF THE REGISTRATION STATES.

Cities.		Violence mortality per million of population
Chicago	1905	1,058
Chicago	1900	972
New Jersey cities	1900	973
Michigan cities	1900	951
District of Columbia	1900	929
Connecticut cities	1900	908
New York cities	1900	835
Rhode Island cities	1900	791
Vermont cities	1900	772
Massachusetts cities	1900	730
New Hampshire cities	1900	661

those of Philadelphia and Baltimore and more than equal to the sum of those in St. Louis, Boston and Baltimore. When we calculate the exact rate per million of population, we find that in that year Chicago was worse than New York, St. Louis, Philadelphia and Baltimore, and, while its violence was exceeded by Boston, we should remember that in that year Chicago's rate was much lower than its average and Boston's rate higher than its average. In 1903 Chicago's rate was much higher than that of any of these cities.

If, now, we compare the violence in these cities, taking as a basis the number of violent deaths to 10,000 deaths from all causes, we find that Chicago is by far the worst. That this is so is partly owing to a fact of which most of us are justly proud, viz.: the death rate in Chicago is lower than that of any of the large cities, and this is true not only of this country, but of Europe as well. That the general mortality is much lower, while the violence mortality is higher in Chicago than in other cities, seems to show that those who have to do with the prevention and cure of disease do their work better here than those whose duty it is to prevent accidents and murders, and serves to bring out more clearly the unenviable violence notoriety which we see deservedly belongs to Chicago.

We have already seen that the violence mortality rate in Chicago for the census year 1900 was the lowest in twenty years, yet the census report shows that it was higher that year than the average rate for all the cities of the registration states* and for each of these states individually, except New Jersey and Maine. It is a noteworthy fact that, while the

TABLE 7.—VIOLENCE MORTALITY COMPARED WITH TOTAL MORTALITY.

Decade.	Population in Thousands.	Average Annual Deaths all Causes.	Average Annual Violent Deaths.	Deaths all Causes per 1,000.	Violent Deaths per 1,000,000.	Violent Deaths to 1,000 Deaths.	Deaths all Causes to 1 Violent Death
1856-65	109	2,800	120	23.40	1,006	43	23
1866-75	307	7,400	300	23.80	964	41	24
1876-85	503	10,700	460	20.30	861	46	22
1886-95	1,209	21,300	1,300	20.10	1,232	60	17
1896-1905	1,699	25,200	1,800	14.71	1,052	72	14
1904	1,935	26,300	2,000	13.62	1,042	76	13
1905	1,995	27,200	2,100	13.67	1,058	77	13

Massachusetts cities are made up largely of mill and factory operatives, yet, owing to the efficient factory inspection and the regulations intended to safeguard the lives of the operatives, the violence mortality of this state is the lowest but one of this whole group and about 20 per cent. lower than the Chicago rate.

It is interesting to compare these rates with the violence mortality rates of England and Wales. For the decade of 1886 to 1895 the rate for England and Wales was 648, but slightly more than that of the Chicago rate for the same period and only about 60 per cent. of the Chicago rate for the last decade of 1896 to 1905.

It is a well-known fact that the death rate from all causes and from all or nearly all communicable diseases has been greatly reduced in the past fifteen years, the rate for the last decade, 1896 to 1905, being markedly lower than the average rate for the past fifty years (see Diagrams III, IV and V). In contrast with this we have already seen that the violence mortality for the past decades was higher than the average for fifty years and was increasing. Thirty-five years ago 4 per cent. of all

*The registration states are Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, District of Columbia and Michigan.

deaths were violent, or 1 in 24. Now nearly 8 per cent. are violent deaths, or 1 in 13.

Table 7 enables one to make a comparison of the death rates from infectious diseases, all causes, and violence.

The saving last year alone over the average fifty-year rate is as follows: Tuberculosis, 470 lives; typhoid, 1,000; scarlet fever, 1,200; diphtheria, children under 5 years, 11,000, all ages, 11,000. Had the vio-

TABLE 8.—MORTALITY RATES FOR THE DECADE 1896-1905 COMPARED WITH HALF CENTURY.

Cause.	Average Mortality per Million of Population.	
	For 50 Years 1856-1905	For Decade 1896-1905.
Tuberculosis	1892	1531
Typhoid fever	632	310
Scarlet fever	644	120
Smallpox	279	8
Measles	219	83
Diphtheria	1237	418
All causes	20460	14710
All causes under 5 years	10060	4910
Violence	1023	1052

lence mortality decreased in proportion to the typhoid decrease, 1,500 lives would have been saved from violent death during the last year alone.

One other comparison suggests itself. Irrespective of the increase or decrease, how does the number of deaths from violence compare with those from some of the principal causes, e. g., from typhoid fever, tuberculosis or heart diseases? During the past decade only four other causes contributed more to the total mortality than violence. These were pneumonia, consumption, diarrheal diseases and nervous diseases.

TABLE 9.—PRINCIPAL CAUSES OF VIOLENCE.

Cause.	Chicago, 1905.	Chicago, 1900.	Registration Cities, 1900.	Registration Area, 1900.	U. S. 1900.
Suicide	430	356	2,856	3,400	5,500
Railroad Accidents	319	258	2,941	3,792	6,930
Falls	285	219	....	....	....
Homicide	185	102	609	657	....
Street car	147	73	....	....	....
Drowning	145	131	2,254	3,152	5,400
Burns	140	126	2,118	2,545	6,772
Total	2,107	1,652	21,718	27,649	57,513

Diagram VII shows the rates and relative importance of each of the twelve causes which contributed most to the total mortality of Chicago during the past decade, from 1896 to 1905.

The violent deaths were more than two-thirds as many as those from consumption and more than the deaths from heart disease. There were as many deaths from violence as from cancer, diphtheria and scarlet fever combined, or as many as due to diphtheria, typhoid, scarlet fever, smallpox, whooping cough and measles altogether, i. e., the violence

mortality was practically equal to the total mortality from the communicable diseases, with the exception of pneumonia and consumption.

Now, if we inquire further as to which class of violence—the railway accidents, the suicides, etc.—contribute most to the violence mortality, we shall probably be surprised to find that suicides furnish the largest number. Without an examination of the statistics we would probably say that those killed by railways outnumber those from any other single cause, and this is true, or was in 1900, taking the country as a whole, but in Chicago suicides are first, railway accidents second and murders fourth.

In Chicago, during the past two years, the 2,060 average annual number of violent deaths were distributed as follows:

TABLE 10.—ORDER OF CHIEF CAUSES OF VIOLENCE AND PERCENT WHICH EACH IS OF THE TOTAL. AVERAGE FOR 2 YEARS, 1904-05.

Suicide	426	21	per cent.
Railway Accident	322	16	per cent.
Falls	300	15	per cent.
Homicide	158	8	per cent.
Burns	150	7.5	per cent.
Street Railway Accidents	136	7	per cent.

It is interesting to compare these numbers with the average annual deaths from the communicable diseases during the past two years.

TABLE 11.—CHIEF CAUSES OF VIOLENCE COMPARED WITH COMMUNICABLE DISEASES. AVERAGES FOR 1904-5.

Diphtheria and croup	421
Suicides	426
Typhoid fever	351
Railway accidents	322
Scarlet fever (111), Measles (139), Smallpox (45), and malaria (11)	306
Falls	300
Scarlet fever and smallpox	156
Homicide	158
Measles	139
Street railway accidents	136

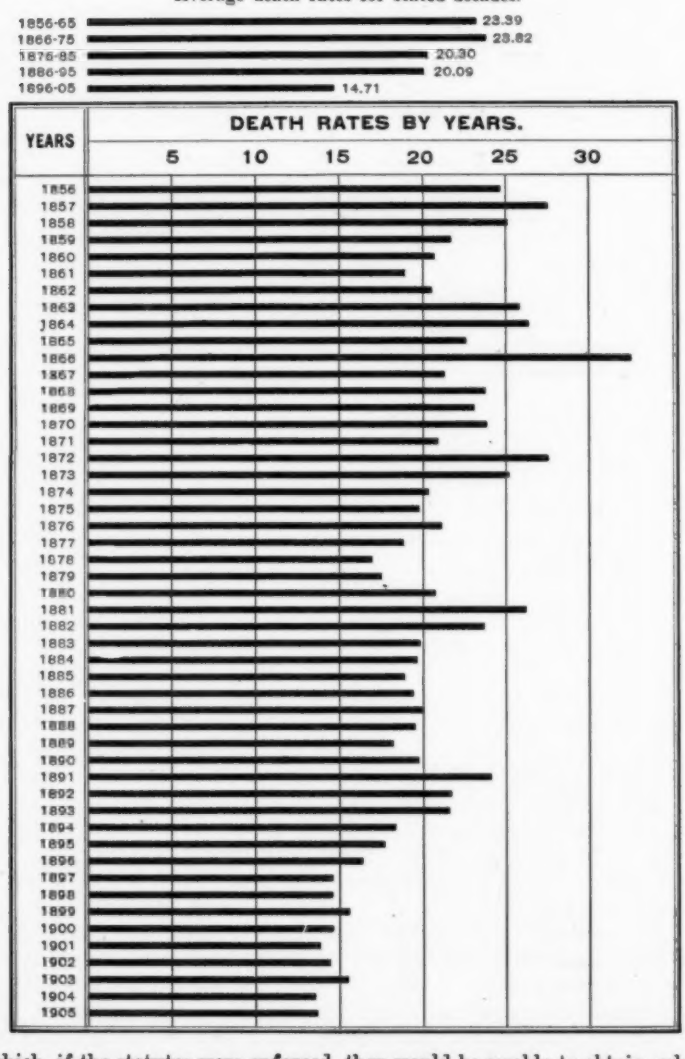
From these tables it appears that the suicides are more than one-fifth of all violence; railway accidents and falls about one-sixth, each, and that three causes together make up more than half the total. The railway and street-railway accidents together furnish 22 per cent., while suicides and murders together contributed 27 per cent.

There are as many deaths from suicide as from diphtheria and croup. Nearly as many from railway accidents as from typhoid fever. The deaths due to scarlet fever, measles, malaria and smallpox all together are only a few more than those due to falls and less than those due to railway accidents. The murders exceed the number killed by scarlet fever and smallpox, and the number killed by street railways is equal to the deaths from measles.

Is this slaughter of human life capable of being lessened or prevented? My answer is, unhesitatingly, that it can be lessened fully 50 per cent. From 1890 to 1897 the number killed by railroads in Chicago was reduced from 22 to 11 per 100,000, or exactly 50 per cent. When it is remembered that a very large percentage of the suicides, 20 per cent.,

destroy themselves during the temporary absence of their nurse or friends and that another large per cent.—35—commit suicide by taking poison,

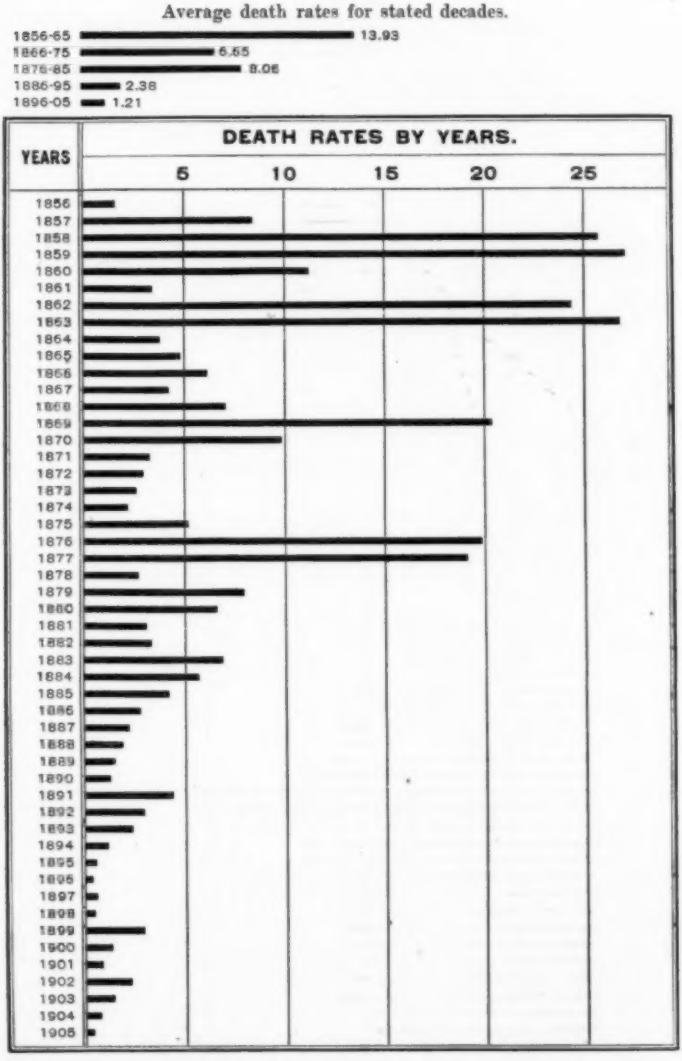
DIAGRAM III.—DEATHS FROM ALL CAUSES.
DEATHS PER 1,000 OF POPULATION.



which, if the statutes were enforced, they would be unable to obtain, when these things are remembered, we see how largely these violent deaths could be diminished. Then, if the building laws and building-inspection

laws were even fairly well enforced, fully another fifth of these deaths would be prevented. Last year there were 185 murders in Chicago. If

DIAGRAM IV.—SCARLET FEVER.
DEATHS PER 10,000 OF POPULATION.



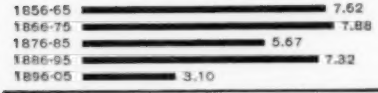
Chicago was governed like London, there would have been 175 less.

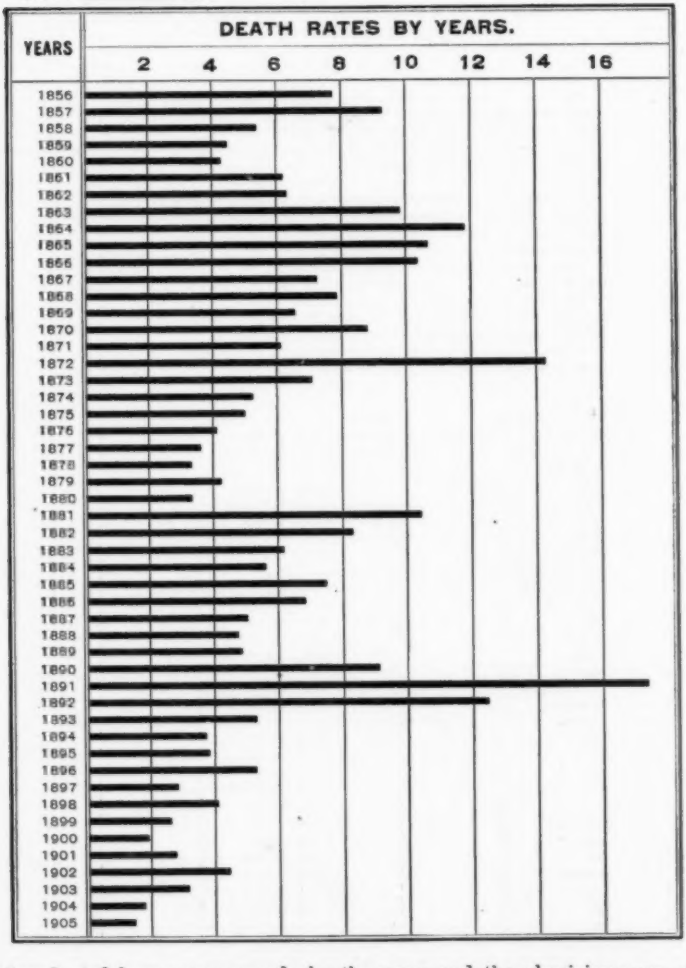
Perhaps this is not strictly an affair of physicians, but anything that affects human life is not far afield of the physician's interest. It is my

earnest hope that a committee of the medical society be appointed to consider why the violence mortality of Chicago is so high, how it may be

DIAGRAM V.—TYPHOID FEVER.
DEATHS PER 10,000 OF POPULATION.

Average death rates of the stated decades.





reduced, and how a propaganda by the press and the physicians can aid in bringing about such a reduction. Let me repeat, at least 1,000 lives a year can be saved in Chicago if every physician will only take the time

and trouble to report every violation of the ordinances intended to safeguard life, such as absence of gates at grade crossings, dangerous buildings or scaffoldings, lack of fire escapes, etc. The 3,000 physicians of Chicago could easily, if they would, keep at it, make their aldermen, police officers and authorities in general feel that we expect them to en-

DIAGRAM VI.—VIOLENCE MORTALITY RATE COMPARED WITH THE RATES FROM OTHER CAUSES.

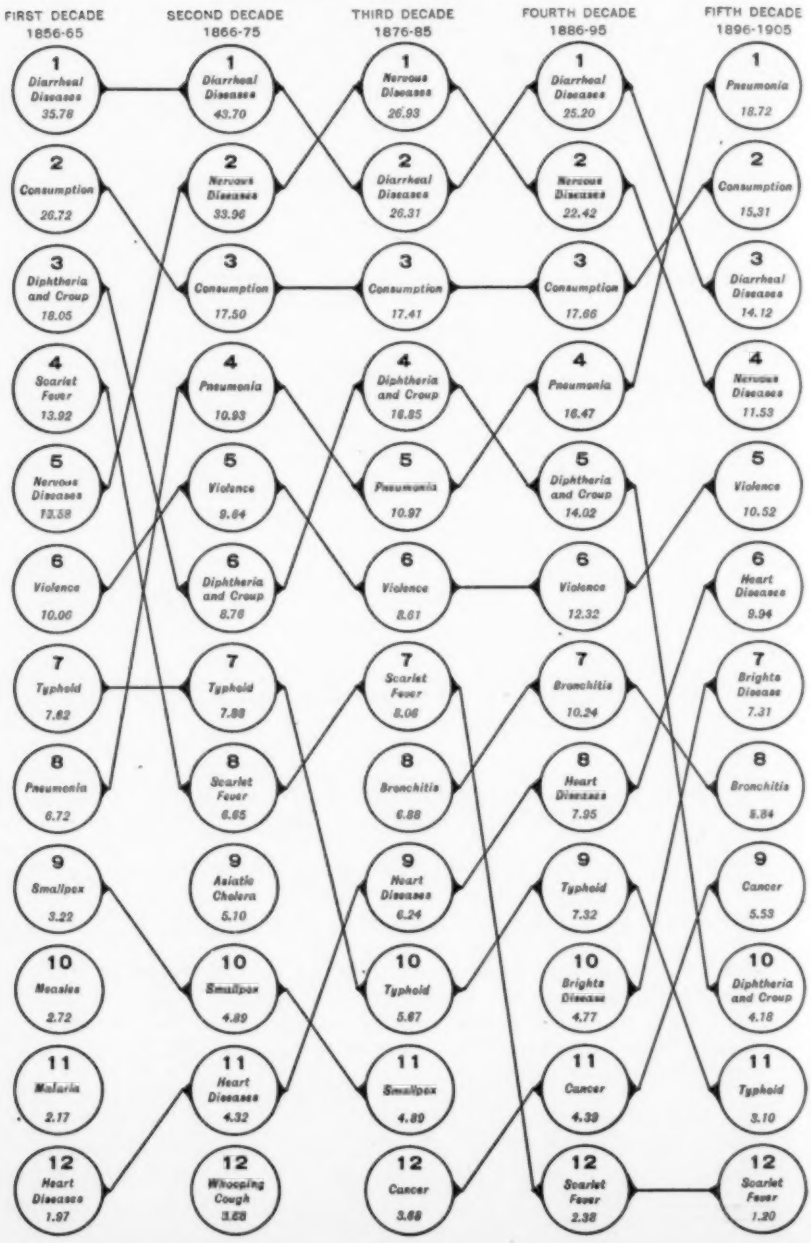
force the law and make them know that there is an organized body of 3,000 intelligent, observant people going about in this city every day, taking notice of delinquencies, a body of men who will not quit holding up our shortcomings as a city, until this great wrong has been rectified.

5661 Washington Avenue.

DIAGRAM VII.—CHIEF CAUSES OF DEATH DURING HALF A CENTURY IN CHICAGO.

In Order of Highest Death Rates per 10,000 of Population.

By decades—1856 to 1905 inclusive.



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SEPTEMBER, 1906.

THE WEST VIRGINIA MEDICAL JOURNAL.

The West Virginia State Medical Association is the last state organization to take up the journal idea, and on August 1 issued the first number of the *West Virginia Medical Journal*, which will be published bimonthly by the committee on publication, of which Dr. S. L. Jepson, of Wheeling, is chairman. The first journal contains fifty pages of reading matter and eight pages of advertisements. It is well printed and edited and should receive the hearty support of the entire profession of West Virginia.

Among the interesting items we note in this issue that twelve of the state medical appointees are not members of the state society and that the organization has taken up the subject of the State Board of Health and has asked the Governor to consider the State Medical Society hereafter in the appointment of members of that body. This being a subject of live interest to physicians of Illinois, we print herewith the text of the resolutions offered at the last West Virginia meeting:

WHEREAS, The State Medical Association is the sole representative of the organized medical profession of the state; and,

WHEREAS, It is composed of educated, progressive and liberal-minded physicians; and,

WHEREAS, The profession, thus organized and growing, is now and always has been ready and willing to lend its services to the state and to

every community in developing an interest in sanitay science and in putting down epidemics, limiting the spread of disease, and lessening sickness, and consequent poverty and suffering; therefore,

Resolved, That it is respectfully but urgently suggested to his Excellency, the Governor of the state, that the greatest harmony will be secured and the best results to the state will follow if all members of the State Board of Health and the medical members of all other boards that may be composed in part of physicians be chosen from the membership of the West Virginia State Medical Association. We, therefore, most respectfully urge the Governor to make all future medical appointments from the membership of this Association.

The resolutions were unanimously adopted with applause, and, on motion, the Secretary was instructed to send a copy of the resolutions to the Governor of the state.

The State Board of Health was also asked to secure authority to rescind or revoke the license of any practitioner who by reason of his conduct, vicious habits or mental condition may be found a danger to the public.

These two subjects might be very appropriately touched upon by the Illinois State Medical Society.

VIAVI REMEDY COMPANY.

A number of cities in Illinois have been invaded by people calling themselves the Viavi doctors, and in Springfield, at least, a hospital has been started, dedicated to this method of treatment. A church parlor was secured to exploit this remedy, and all modern methods are being used to boom it. In Adams County, according to the report of the local society, the agent was fined and seems to have been required to promise to cease violating the law. The following statement of the character of this medicine is taken from the *Medical Sentinel,* and if this be true an earnest effort should be made to put these people out of business:

THE VIAVI CONCERN.—In some states the authorities are getting after the Viavi concern, but we have not heard of any such proceedings in the coast states. In Colorado the authorities have had the drugs used in the course of the Viavi treatment chemically analyzed, and the analyst has reported that they are largely opiates. The local agent is being prosecuted for selling and dispensing medicines containing poisonous vegetable alkaloids under the guise of harmless preparations. It is claimed that these Viavi people even have succeeded in getting into the church parlors for the purpose of expounding their theories and selling their nostrums. One woman who had been treated by them subsequently consulted her regular physician, and he told her that she had been taking morphin. She indignantly denied this, but admitted the Viavi. The analyst stated that 85 per cent. of the liquid was morphin and 15 per cent. glycerin. The Viavi product comes from California, but it is spreading all over the country, and the public interest would seem to demand that it receive attention from the various state authorities, as it has in Colorado.

MINUTES OF THE MEDICOLEGAL COMMITTEE.

The executive committee of the State Medicolegal Body met in Chicago, July 25, with Dr. W. A. Evans as temporary chairman and C. D. Pence temporary secretary. Those present were Dr. J. F. Percy of Galesburg, Dr. E. W. Weis of Ottawa and Drs. W. A. Evans, H. N. Moyer and C. D. Pence, Chicago. A letter from Dr. M. L. Winstead was read, stating that it was impossible for him to be at the meeting at this time.

The matter of the affiliation of the medicolegal committee of the Chicago Homeopathic Medical Society was discussed. As they are already in affiliation with the medicolegal committee of the Chicago Medical Society, it was decided that their continued coöperation would be both legitimate and desirable and that an explanation should be given the Chicago Homeopathic Society of the changes in the workings of the committee.

It was the opinion of the committee that an effort should be made to affiliate with the medicolegal committee of the State Homeopathic Medical Society during the coming year.

Dr. Weis moved that Drs. Evans and Moyer draw up a card of instructions, giving information in regard to instituting defense, etc. These to be sent to the various members of the executive committee for suggestions and, after revision, to be mailed to each member of the medicolegal committee. Carried.

Paying of attorney's fees was discussed by the committee, especially as to the advisability of attempting to pay either a part or all of the attorney's fees in damage suits. It was decided to pay all the expenses of a case up to the time of trial and one-half the trial attorney's fees, the defendant paying the other half, and if at the end of the year the financial condition of the committee would warrant it to refund to the defendant the amount he had paid, the committee thus paying the entire expense of a damage case.

The question of a central office was next considered. Dr. Weis moved that the central office be maintained in Chicago. Carried.

Dr. Weis then moved that the organization be made permanent and that Dr. W. A. Evans be elected as chairman, C. D. Pence as secretary and H. N. Moyer as treasurer. Carried.

Dr. Evans moved that Dr. Moyer be appointed to consult various attorneys relative to our work for the ensuing year and obtain propositions from them pertaining to the same, and to report to the other members of the committee for a mail vote. Carried. Expenses of the committee was then considered. No definite action was taken, but a general instruction to keep the expenses at the minimum was ordered.

A motion was made to have the minutes of this meeting published in the JOURNAL. Carried.

Meeting adjourned, subject to the call of the chairman.

W. A. EVANS, Chairman. C. D. PENCE, Secretary.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The regular monthly meeting of the Adams County Medical Society was held August 13, at the Elks Club in Quincy, with Dr. L. H. A. Nickerson presiding, in the absence of the president and first and second vice-presidents. Those present were Drs. Beirne, Becker, Christie, Knox, Koch, Liesen, Montgomery, Nickerson, Rice, Roach, Rosenthal, Robbins, Shawgo, K., Shawgo, J. B., Wells, Williams, W. W., and Zimmerman. The following applications for membership were read and ordered to take the usual course: James F. Roach, Quincy; W. A. Garner, Clayton; J. R. Whray, Golden. Dr. A. J. Blickhan was elected to membership in the Society.

The committee appointed to draft resolutions on insurance examinations and contract work presented a resolution, which was amended as follows:

WHEREAS, a resolution, proposing an amendment to article II of the appendix, known as the "fee bill," by striking out the fourth line thereof and substituting therefore, "all examinations for life insurance be $5.00," has been adversely acted on by the Society; and

WHEREAS, the prevailing opinion as obtained by conversation with individual members of the Society is that the strength of the Adams County Medical Society is not such as to enable it to carry out this ideal and greatly to be desired end; and seeking the obtainable and practicable rather than the ideal we, as a committee, therefore recommend that the fee bill wherein it affects the fees for life insurance examinations be left in statu quo, with the understanding that the maximum fee, $5.00, named in the fee bill shall apply to all examinations for "old line" insurance.

Dr. Christie moved the adoption of the following amendment: That it be the sense of the meeting that the charge for all life insurance examinations should be $5.00. This amendment was adopted.

In regard to contract practice, the following resolution was adopted:

Resolved, That it is derogatory to the standing of the medical profession and detrimental to the public health for any member of the profession to resort to competitive bidding to secure public, society, corporation, casualty company, college or school appointments or to contract for term service to societies, corporations, casualty companies, colleges, schools, families, or individuals for a fixed sum or, in other words, to take the chances of such societies, corporations, institutions, families or individuals having more or less or no sickness or casualties during such term; and be it further

Resolved, That the above resolution shall not be held to apply to any purely charitable or eleemosynary institution.

Dr. J. A. Koch, member of the Medical Defense Committee for Adams County, reported as follows:

I, your committee of one to give assistance to the secretary of the State Board of Health in the prosecution of the agent of the Viavi Remedy Co., wish to report that a warrant for the arrest of the agent, Miss Cecilia Mahoney, was sworn out by the local attorney of the Board, Emery Lancaster, and the trial set for August 11. The attorney for the Viavi Remedy Co. appeared in Quincy, on August 10, and offered to accept a fine and pay costs. After consultation with Dr. Egan at Springfield, he gave the Adams County Medical Society permission to either continue prosecution or permit the Company to pay a fine and costs and sign an

agreement by the agent to cease violating the law. On laying the matter before the first vice-president and secretary of the Adams County Medical Society, we decided on the acceptance of the fine and costs, the former amounting to $35.00. Adjourned.

GEORGE E. ROSENTHAL, *Secretary.*

BUREAU COUNTY.

The twenty-fifth semi-annual meeting of the Bureau County Medical Society was held in the City Hall in Princeton, Thursday, May 10, 1906, with the following members present: Wm. Kaull, H. D. Steele, Georgia M. Snader, Wm. Keller, C. A. Palmer, C. C. Scott, O. J. Flint, F. C. Robinson, H. M. Owens, C. C. Barrett, M. N. Gernsey, M. H. Blackburn, B. F. Landis. Visitors present were: Drs. F. X. Walls, of Chicago; Persus White, L. H. Wiman, of Lamoille; and John Francis Lewis, of Depue. Drs. Wiman and Lewis made application for membership and were duly elected members of the society.

The minutes of the preceding meeting were then read and approved.

A communication from the committee representing the American Medical Association, in regard to subscriptions to the fund for the relief of physicians of San Francisco, was then read. It was suggested that the physicians act individually as they saw fit, and no further action was taken. A communication from the Childrens' Hospital Society of Chicago, in regard to an attempt to be made next year to have the State Legislature pass a bill for the establishment of a State Colony for Epileptics in Illinois was read, and referred to the Legislative Committee for action. Dr. Walls, being made an honorary member of the Society, with the right to take part in discussions, pointed out that the State of Illinois had no home for epileptics, and that there was a great need for such an institution and that, to succeed in this effort, the united efforts of the physicians of the State were needed.

A communication from the Fox River Valley Medical Association, expressing their disapproval of the common practice of preserving poultry and game in cold storage for indefinite periods, after removing the entrails, and urging the passing of an ordinance prohibiting the sale of such poultry and game, was read and referred to the Legislative Committee. A communication from the Pike County Medical Society, enclosing a resolution deprecating the proposed reduction in fees for medical examination of applicants for insurance, and urging the necessity of physicians holding to the standard price for making such examinations, was read. After some discussion, the following resolution was adopted:

WHEREAS, The Bureau County Medical Society feels that the proposed reduction in fees for medical examinations for life insurance applicants, is uncalled for, therefore be it

Resolved, That the Bureau County Medical Society goes on record as being opposed to such reduction.

The meeting then adjourned until 1 o'clock p. m. The afternoon session convened at 1:15. Dr. F. X. Walls, of Chicago, then gave a short talk on Infant Feeding. He said that most of the artificial foods should have no place in a baby's dietary, and that the only artificial food that should be used was cow's milk, which was not and could not be made the same as mother's milk, however modified. He pointed out that proteid matter was the element in cow's milk, which caused the most trouble, when modified for infant feeding. He showed, by various charts, the proper manner of modifying cow's milk for the feeding of infants at various ages.

Dr. F. C. Robinson, of Wyanet, read a paper on the experience of a country practitioner. He made references to many amusing incidents, which had occurred in his long years of practice. Dr. H. D. Steele read a paper, the title of which was A Few Desultory Remarks. The papers of Dr. Kaull, on Hydrotherapy, and of Dr. J. H. Franklin, on The Relation of the Country Practitioner to the Specialist, were postponed until the next meeting.

O. J. FLINT, *Secretary-Treasurer.*

CHRISTIAN COUNTY.

The Christian County Medical Society met at Taylorville in regular quarterly session July 19, 1906. Twenty out of the fifty-two physicians in the county were present, making the largest attendance at any meeting since the organization of the society. Dr. E. J. Brown, of Decatur, gave an interesting talk concerning the meeting of the American Medical Association at Boston, and afterward read a paper on the Modern Conception of Bright's Disease and Its Treatment. Dr. Saling, of Stonington, read a paper on Cystitis. Dr. John H. Miller, of Pana, read a paper on the Prevention and Treatment of Typhoid Fever. The discussions were pointed and profitable.

The following new members were admitted: Ira E. Neer, Edinburgh; Fred Griffin, Morrisonville; C. O. Nelms, Taylorville; L. C. French, Stonington. The society adjourned to meet in its next quarterly session the third Thursday in October.

D. D. Barr, *Secretary.*

COOK COUNTY.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held May 1, 1906, with the president, Dr. Otto T. Freer in the chair. Dr. F. B. Brawley demonstrated the suction method, as used in diagnosis in accessory sinus disease.

DISCUSSION.

Dr. William E. Casselberry:—I would like to ask Dr. Brawley how he manages to maintain a vacuum, when he gives a treatment lasting from half an hour to an hour, and whether he had a means of maintaining closure of the palate continuously for any length of time?

Dr. Brawley:—In speaking of Dr. Hollinger's apparatus, it seems to me the apparatus, such as I have described, is simple, so that nearly everyone who has the Victor motor and pump can use it. The only additional apparatus necessary is a few yards of rubber tubing and glass tubing to complete the outfit. Dr. Casselberry asked about continuous treatment. I find, in certain cases, that there is no difficulty in getting continuous suction; the velum seems to release during inspiration. It does not interfere with suction.

Dr. Ballenger said that he was afraid that this method can not be carried out for long-continued treatments. I do not recommend the method for long-continued treatments, because I have not had enough experience to talk about that phase of the subject, and as Dr. Ballenger's experience is so much greater than mine, of course he is more qualified to speak of the advantages and disadvantages of the method in that line.

Dr. Freer spoke about the use of a mask. I do not use a mask, for the reason that it is an expensive attachment; it has to have a pneumatic rim to it; it gets out of order easily and becomes smeared with the discharge. It is an unhygienic arrangement, and after you have finished treating a case in which you have used a mask, you have a ring of hyperemia in the nose like that of a drunkard, and in women this would be an objectionable arrangement to use.

REPORTS OF CASES.

Dr. Joseph C. Beck.

EXOSTOSIS OF THE MIDDLE EAR.

Case 1.—The first case I wish to present is the one I showed in the other room, and it is a case of exostosis of the middle ear. The patient, a woman, presented herself June 22, 1905, with the following history: She has had tinnitus in her right ear and some loss of hearing, for a period of several months, for which she went to a specialist, who inflated the ear for a month or two. During this time, the symptoms present were not relieved, but became aggravated, and, finally, spontaneous perforation resulted, with a mucus discharge. About this time I saw her, and, on examination, found the mucous membrane of the inner wall of the

middle ear highly congested, with a mucus discharge from the ear, which was quite profuse. There was also marked diminution in hearing, during the few days she was under my observation. Ten days later, she developed mastoid symptoms, with pain in the back of the ear. I enlarged the perforation in the drum, with no result, and, noticing that the deafness was increasing rapidly, I decided to do a simple mastoid operation, which was done with a very gratifying result, in that the discharge ceased after two or three weeks.

An interesting pathologic condition, that developed in this patient about six weeks after the discharge stopped, was that more than two-thirds of the drum membrane disappeared, and at the floor of the middle ear, a new formation of bone sprang up, so that, in about six weeks, small portions of bone had formed. These particles of bone were hard to the probe and increased in size, until after two weeks they reached the size of a millet seed. They have not increased in size since then.

From a therapeutic standpoint, this case is interesting to me, because the symptoms are those of extreme tinnitus aurium and loss of hearing, and it is a question whether the removal of the exostoses from the middle ear will relieve those symptoms. I would like to get suggestions in regard to the further treatment of this case. I have instituted the usual treatment except operative interference.

SINUS THROMBOSIS, BULB AND THROMBOPHLEBITIS.

Case 2.—I wish to present a second case. The patient is a young man, 18 years of age, healthy parents, whose previous health was good until six years ago, when he consulted a physician on account of impaired hearing in the left ear. There was no discharge from the ear at the time. He was treated by douches. Four years ago he noticed a discharge from the left ear, but there was no pain previous to the discharge. The discharge became fetid and continued until February 18, 1906, when pain developed in the ear, after exposure to cold. The mother treated the ear with hot drops of oil; but the pain continued. The next day he called a physician, who recommended irrigation of the ear, and the application of a hot linseed poultice. During this time he developed a chill, followed by a temperature of 105°. The chills became more frequent until there was one every hour, accompanied with high temperature and vomiting. The condition lasted until February 24, when the discharge from the ear ceased, and the patient became delirious. I was called to see the patient at this time. On examination, I found a scant amount of purulent material in the external auditory canal, with a small perforation high up, involving the upper and outer wall of the canal, with considerable tenderness over the mastoid region. There was a swelling below the angle of the jaw, extending along the sterno-cleido-mastoid muscle. The pulse was 140; temperature 105°. I made a diagnosis of thrombosis of the left jugular bulb and acute exacerbation of chronic mastoid disease, with, probably, some necrosis of bone.

The patient was immediately transferred to the hospital and was operated on at 9 p. m. as an emergency case, without having had the necessary preliminary preparation. I did a radical mastoid operation, exenteration of the entire mastoid, the incision having been made down along the sterno-cleido-mastoid, and exposing the jugular vein for its upper third, or as far as it was thrombosed. I excised the vein as far as I could towards the jugular bulb, exposing the lateral sinus by making an incision, as recommended by Whiting, until I came to the free sinus, removed the clot and carried the incision as far as I thought necessary to reach the jugular bulb and the communication between the thrombosed vein. I packed the wound, and put the patient to bed. Temperature the next day was normal, and remained so for two weeks. Two weeks later he developed pain on the right side, at the base of the lung. This proved to be a pleuro-pneumonia. He recovered from this, then the left side became involved; similarly, there was rusty sputum. Examination of the sputum showed a great many pneumococci, so that this was a pneumococcic infection. About two weeks after the pleuro-pneumonia cleared up, this boy had a sudden chill, with high temperature, pain in the head and buzzing and loss of hearing on the right side. I anesthetized the patient the following

day, exposed the cerebellar and cerebral region for abscess, found none, removed the bone at these parts, and curetted thoroughly the old field of operation, leaving the cerebellar, as well as cerebral surfaces, exposed. This large cavity was packed and dressed daily, with a pleasant result following, in that the temperature remained normal, and the patient recovered, with the exception that there is, at this point, a small hernia cerebri, and, of course, the ear markedly sagging down. I did not slit the membranous canal in operating, owing to the fear of perichondritis or chondritis of the auricle. I took several *x*-ray pictures of the case to show the bony effect following the operation, and the hernia cerebri.

I want to mention the operation on the opposite side. I thought, possibly, there was some trouble in the opposite ear, so I opened up the antrum mastoidei and found it to be absolutely normal. I then allowed the cavity to fill up with blood clot, and sewed it up. We should not drain when we find no trouble, but sew up the wound and try to obtain primary union. Heretofore, when I have drained in this class of cases a long after-treatment has been necessary.

During the time the boy had chills and fever, I administered what I believe is of value in these cases of thrombosis, namely, glycogen hypodermatically in five-grain doses, and colargulum intravenous injections.

NECROSIS OF TEMPORAL BONE, WITH UNUSUAL FISTULA.

Case 3.—History: Miss H., 44 years old, with a good family history. Usual diseases of childhood. For the past ten years, has been suffering with marked headaches on the right side, back of her ear. I saw the patient with Dr. McLane about four years ago. She complained very much of the pain in her head, dizziness and tendency to fall to the affected side.

Examination: Hearing of the patient was reduced in the right ear to about one-fourth for conversational tone. Watch contact; Rinné was negative. Weber laterated to the right.

The tympanic membrane appeared somewhat thickened, but intact, except at the lower inferior quadrant. At the very periphery of the membrane was situated a small perforation, which, on inflating the middle ear, was found not communicating with this cavity. A small amount of pus, which had the odor of necrosed bone, could be wiped out. A probe introduced into this opening gave evidence of roughness of bone. On the side of the neck, along the anterior border of the sterno-cleido-mastoid muscle, was a long scar, the result of spontaneous rupture of an abscess, which the patient says she had during childhood.

Diagnosis: Necrosis of temporal bone. An operation was advised and accepted.

In September, 1902, under general anesthesia, patient was operated on. The usual post-auricular incision was made, and the antrum exposed and found normal. Then the bony canal was chiseled off, going downward rather than upward towards the existing perforation or necrotic area. One will easily appreciate the apprehension of wounding the facial nerve in this procedure. On locating this focus of infection, we found necrosis apparently not very extensive, and, after thoroughly curetting, a plastic completed the operation. The result was but partially good, in that the headaches were less intense. A slight facial paralysis resulted, but cleared up very shortly. The dizziness, however, persisted, and, in fact, became worse. Patient then left the city and did not return until October, 1905, with about the same symptoms, only the headache was more aggravated and localized to a point back of the mastoid process, about the region of the sigmoid sinus. This point was so tender that patient could not lie on that side of her head and the palpation of it was very sensitive. On examining the ear, we found the hearing much reduced, and at the right of the original perforation was a small granuloma, touching which made the patient very dizzy. This symptom suggested labyrinthine necrosis. The hearing tests at this time showed a reduction in bone conduction, and the Galton whistle was not heard well in the higher registers. I concluded that there was still necrosis of bone, possibly greater than externally manifested, and decided to reopen and explore.

In November, 1905, the old post-auricular incision was reopened and carried

somewhat farther down the neck. From the upper limit of this incision, I carried another semilunar incision backward and downward toward the neck, making a flap, two inches wide, and three and one-half inches long, with the base at the neck, a sort of a hinge-shaped flap. Then I exposed the mastoid by peeling the auricle forward. The next step was to bring down this hinge-shaped flap, including the periosteum, exposing this very tender region spoken of above. By so doing, from an opening at the point just where the great tenderness existed, I obtained a hemorrhage, such as one gets on opening the lateral sinus. At first I thought of an emissary vein, but it proved otherwise. The periosteum that was peeled off had attached to it a small piece of bone, that corresponded to the bleeding opening and the bone looked diseased. On further examining the bleeding area, I discovered that it was the lateral sinus whose bony covering was necrosed, but that the sinus itself was in good condition. The next step was to expose the lateral sinus higher up, so as to compress it temporarily, thereby checking the bleeding, while exploring the diseased area. This was very readily accomplished and, to my surprise, I found a fistula leading from the above described necrotic area, namely, the bony wall of the lateral sinus, forward, downward and inward into the middle ear cavity, where I had found the granulating area, on inspection of the canal.

Leaving the probe in this position, I chiseled down on to it, and nearly through the facial canal, in that manner destroying the continuity of the nerve. The fistulous tract was thoroughly curetted, three strands of silkworm gut were introduced as a drain, and the cavity was allowed to fill up with blood, which clotted and was not disturbed. The exposed lateral sinus was packed and drained, through a separate opening in the skin. The case was dressed on the third day, removing the silkworm gut drain, also the gauze from the sinus, leaving the blood clot undisturbed, in the canal and the middle ear. From that time on, only external dressings were changed, and, after two weeks, the posterior wounds were closed by granulation. After that, I noticed a remarkable difference in the wound in the canal and middle ear, in this case, from other cases, where I had been using gauze as a drainage, and, finally, when the last particle of dried blood was removed, the surfaces were almost entirely epidermized.

Result: The headaches and pains of the side of the head disappeared. Patient was able to lie on the right side of her head again. Dizziness disappeared. Hearing improved some. Complete facial paralysis.

[Note.—Since this case was presented I have performed an anastomosis between the facial and hypoglossal nerves to correct the facial paralysis. The method was an end-to-side anastomosis. It is now about one week since operation. The wound has healed by primary union, but, of course, I can not state anything as to the result at this time. I shall make a special communication regarding this plastic operation.]

Dr. Ira Frank:—I had the good fortune to assist Dr. Beck in the operation he has described, and, as he has said, in freeing the periosteum from the bone and pulling down the flap we thought at the time that we had ruptured the emissary vein. Dr. Beck, in following the fistula into the middle ear, spoke of severing the facial nerve, which was done intentionally.

Dr. George W. Shambaugh:—In regard to the exostosis shown in the first case reported by Dr. Beck, I can see no reason for expecting any influence on the symptoms the patient complains of by its removal. I see no reason for connecting these symptoms with the exostosis. The exostosis does not, apparently, spring from that part of the inner wall of the tympanum which is formed by the bony capsule of the labyrinth. It is the middle and posterior upper parts of the inner tympanic wall that are formed by the capsule covering the first turn of the cochlea and the vestibule. An exostosis in the lower anterior part of the tympanum is not connected with the capsule of the labyrinth. In the second case reported by Dr. Beck, where he removed a thrombosis from the sinus on one side and eventually operated on the opposite mastoid, I was not able to clearly understand his reasons for operating on the opposite mastoid. He stated that there was tinnitus in that ear, but I did not gather from his remarks whether there were

any local evidences about the ear pointing to probable suppurative disease on that side.

The third case reported by Dr. Beck is a very interesting one. I am inclined to believe that the bleeding encountered while lifting the periosteum from the posterior aspect of the mastoid was from the emissary mastoid vein, unless this vein was found at another point during the operation. If I understand Dr. Beck correctly, he found the lateral sinus involved and partially thrombosed on this side. A high position of the bulbus jugularis is not an infrequent occurrence, in which case this bulb encroaches on the lower posterior part of the tympanum just at the point where I understand the probe in this case entered the tympanum. It would be interesting to know whether the fistula in the bone through which the probe passed from the posterior aspect of the mastoid into the tympanum did not lead to a thrombosed jugular bulb, through which the probe passed before entering the tympanum.

Dr. Beck:—I would like to have Dr. Shambaugh explain why, after pulling back the periosteum, free bleeding from the sinus took place, if he does not think there was some necrosis over the region of the lateral sinus? In pulling down the periosteum over the posterior part of the mastoid the emissary vein of the mastoid would be torn, producing bleeding from the lateral sinus unless the sinus was completely thrombosed. A localized necrosis at the point of entrance of the emissary vein could, of course, be present and would conform with the history of partial thrombosis of the lateral sinus.

As I tried to report these three cases in as short a time as possible, I perhaps did not make myself clearly understood. If the gentlemen had seen the cases referred to when operated upon they would have understood them better. In Case 3 the opening in the middle ear was situated low down, posteriorly, on the floor. The posterior part of the middle ear was rough to the touch of the probe. There was fetid pus, but no bleeding from that point. The operation consisted in exposing the tender point back of the head. I made a tongue-shaped flap, so that the apex of the flap was upward, and in pulling it down free bleeding occurred, a portion of the bone or sequestrum having been found attached to periosteum. There was necrosis over the region of the occipital bone back of the mastoid process, where we would expect to find the sinus as it turns down. The question at the time of operation was whether it was the emissary vein, but we found the sinus further back, and by compression stopped the bleeding. In exposing the sinus I inserted a probe into the former bleeding point and followed right down to the middle ear. Therefore there was a fistula that led from this necrotic spot about the lateral sinus to the middle ear. I exposed the fistula until I came to the middle ear, and there was no bleeding at that point. That was not the jugular bulb, but simply a fistulous tract.

Dr. Shambaugh:—You had thrombosis to deal with?

Dr. Beck:—No. I had necrosis about the sinus, with a fistula into the middle ear.

In regard to the remarks made about the operation on the opposite ear in Case 2, I will say that in a case of this kind, where the life of the patient is at stake and where symptoms are present, as deafness and tinnitis aurium, with symptoms of chills and fever, we do not hesitate to open the opposite mastoid, even though the drum is perfect. It was a dull-looking drum. There was a possibility of the patient having trouble in the mastoid without any evidence of it in the canal. We know that such conditions are described, and that was my reason for opening the opposite mastoid while the patient was under an anesthetic.

Concerning the scar to which Dr. Holinger referred, this patient (Case 3) has a keloid scar along the anterior incision—another interesting pathologic condition in this case.

Dr. John Edwin Rhodes reported a case of xanthoma multiplex, in which there were interesting throat complications.

CRAWFORD COUNTY.

The twenty-sixth annual meeting of the society was held at the office of Dr. Frank Dunham, in Robinson, July 12, 1906. The following members were present: Drs. T. N. Rafferty, I. L. Firebaugh, A. G. Meserve, Frank Dunham and H. N. Rafferty, of Robinson; C. H. Voorheis and J. B. Cato, of Hutsonville; J. W. Kirk and J. M. Mitchell, of Oblong; C. E. Price, of Eaton; LeRoy Newlin, of Hardinsville; S. A. Smith, of Annapolis; L. R. Illyes, of Heathsville; J. E. Midgett, of Flat Rock; J. A. Ikemire, of Palestine, and R. S. Johnson, of West York.

The report of the secretary for the closing fiscal year was as follows:

Number of meetings held during year, 6; number meetings missed during year, none; largest attendance at any one meeting, 19; average attendance for fiscal year, 15.7; average attendance for previous year, 9; number paid-up members, 20; amount funds received from all sources, $50; amount forwarded to E. W. Weis, secretary state society, $30; amount paid C. Barlow, treasurer Crawford County Medical Society, $20; expenses of secretary for year, $4.54.

The secretary reports with pleasure the increased interest shown in the work of the society by the individual members, as manifested by the number and class of contributions and by the increased attendance at the meetings. The two important events in the life of the society during the year were the public meeting devoted to the consideration of consumption and the recent entertainment of the Æsculapian Society, both of which were successful beyond expectation.

The report of the treasurer was read by the secretary in the absence of Dr. Barlow. On motion both of these reports were accepted and placed on file. Officers for the ensuing year were elected as follows: President, L. R. Illyes; vice-president, J. M. Mitchell; secretary, H. N. Rafferty (re-elected); treasurer, Frank Dunham; censors, C. H. Voorheis, A. G. Meserve and J. E. Midgett (all re-elected). Dr. J. W. Carlisle was presented as a candidate for membership. It was suggested that application be made in writing, in conformity with our constitution and by-laws, and referred to the board of censors.

It was moved and carried that the society pay the dues of its secretary to the county and state societies and to the American Medical Association, and that a standing order be drawn on the treasurer for this purpose. The committee on arrangements for the meeting of the Æsculapian Society, recently held in this city, made a final report through its chairman, Dr. H. N. Rafferty. On motion the report was accepted and the committee discharged.

Cases were reported as follows: Foreign body in the bladder, J. M. Mitchell; breast tumor (probably carcinoma), J. W. Kirk; fracture of vertebræ, I. L. Firebaugh; fracture of vertebræ, H. N. Rafferty; Hodgkin's disease, T. N. Rafferty and I. L. Firebaugh; two cases for diagnosis, T. N. Rafferty. Dr. J. B. Cato read a very able and timely paper on The Business Side of Medicine, which was discussed by nearly all present.

The president, Dr. Frank Dunham, then delivered his annual address.

PLEASURES AND PASTIMES.

The universe, of which this earth is a part, is a scene of restless activity. Wherever we bid our minds turn or our eyes look, we find evidences of tireless motion. The rivers rush down the mountainside, flow across the plains to join the heaving, billowy ocean. The winds blow hither and thither, wherever they list, over the face of the earth. The earth itself is twirling in space at such a rapid rate as to challenge our sense of wonder, while myriads of stars, at which we gaze awe-struck as they gleam and glisten on the breast of night, also move through space at rates of speed so tremendously great that the average layman looks askance at the figures presented for his consideration. Through the realm of Nature we find motion to be a primary condition of life. In the cemetery, where death is king, there is little onward movement. Active change, forward motion, restless energy are all normal with living Nature. Where the frosts of death have, with icy fingers, congealed life, we find inactivity, rest, quiescence.

Man seeks to imitate Nature. Most of the great machines invented by the

genius of man are the result of the attempts on the part of man to imitate Nature's methods. Even man's efforts are largely the result of his observation of unresting Nature. What ceaseless activity is in the realm of Nature, labor is to mankind. Man's work has transformed the desert into a blooming garden. It has made the crooked straight and the rough places smooth. It has leveled mountains and filled in valleys. It has united continents and has bound the ends of the earth so that they feel the instantaneous throb of electric force. It has made the ocean his servant and the forces of Nature it has yoked to do his will. It has taken rough, unhewn objects and endowed them with grace and beauty. It has constructed cities and made them the abode of universities and colleges, schools and libraries. It has made life desirable and home adorable. Man's work has bound the human family of every creed, color, country and condition into a whole; and, while many still presume to ignore the uniting link, dwelling chiefly on the missing link, yet by the influence of man's work the irrefragible tie of human brotherhood will yet be recognized and the human family will yet assemble around the altar of the one God as children gather about the table of their parent.

Man's work has made Nature subject to him; but only too often man has become the slave of his work. Especially is this true in America. Work, which ought to be the source of great blessing; work, which ought to be the salt of existence; work, which should give zest to the limb and zeal to the mind, strength to the body and force to character, is to-day the tyrant which subjects man to its whim. Work, which should be an agent controlled by us, becomes the actor controlling us. We, as American people, are impressed with the necessity of hastening to get rich. We, who can not boast, as can many European families, of pride of ancestry, are so anxious ourselves to become ancestors of wealth that we have no time for anything but work. Our flag proclaims us free men, but our work proclaims us slaves. Our work is our master and we are its servants. Max O'Rell, when he came to the United States, was more impressed by the notice on so many doors: "Gone to lunch; back in five minutes," than by any other single notice that came under his attention.

We have so much to do that we have little time to spare for the needs of soul and body. There is a splendid motto in the Talmud which says: "Whosoever walks a single path endangers his soul." At first sight the profound wisdom of the adage may not be clear; but it signifies that he who permits his mind to follow a solitary line of thought becomes ultimately a slave to that thought. He may rise in the majesty of a glorious activity and seek, finally, to throw it off, but, generally speaking, it would be as though a child would seek to stem the river's current with its finger. He who walks a single path, who takes a single view of life, be it religious, political, social or economic, and follows that path or view to the exclusion of all other possible views or paths, endangers the welfare of his soul and body.

The man who is a slave to work, who finds no time for diversion, no opportunity for recreation, which is re-creation, no occasion for relaxation, no period for recuperation, endangers his moral as well as his physical health. Work is a necessity to the fullest development of character. But play is also an element in the divine economy of human growth. Work is needed for the maintenance of society; so, too, are pleasures and pastimes.

There lived in the City of New York a millionaire by the name of Russell Sage, chiefly famed for the length, slenderness and security of the stocking in which he kept his wealth. Mr. Sage was a great example of industry and of economy. His theory of life was that man is a machine for the accumulation of money. The heights, the depths of life, its sweetness, its poetry, its passions, its enjoyments were lost to Mr. Sage. He believed that they should be lost to all the world. Literature and art were nothing to him. Civilization and humanity were nothing to him. To his eyes man was a machine, made for the accumulation of money and nothing more.

This poor millionaire applied this doctrine to his own life and to that of all the rest of the world, his narrowness being thus incredible. He stated that in all

his life he never took a vacation, nor did he think that any one else should do so. He said that an employé who asks for a two weeks' vacation is as unreasonable as would be the employer who asks two weeks' work without pay. He regarded a vacation as a gift, a charity, but as such very much to be deplored. This penurious utterance of this penurious and poverty-smitten millionaire gains nothing in response by man's pity.

The years dealt ill with Russell Sage. His theory worked out to the end and ruined him. It is too late for all his money to buy back his manhood, his charity, his touch with humanity. He died as he lived—a failure. I pose as the exponent of no fad and the advocate of no doctrine of extremes. My aim is to be simply sane and fair. As well as the next do I hold up before the youth of this land the doctrine of success, and success at the cost of every honest effort, at the cost of rigid self-punishment and self-denial. At the same time the good common sense of which we trust Providence has given as a little would forbid us from teaching the youth of this country that success in life means merely the accumulation of money. I deprecate the labors of these professional maxim-makers who din into the ears of our youth the doctrines of industry and economy, of self-repression, of self-abasement, who seek to make manhood by means of the printed page. I rebel at the theory of industry and economy and nothing else. I decline to entertain that theory of life which gives us a millionaire at fifty, but a millionaire who can not walk, who can not ride, who can not eat a beefsteak.

All America is running hard and fast into commercialism. We have held up to the admiration of the public the so-called success of men, young and old, who have made large sums of money. Their sayings are quoted, their deeds exploited. They are erected into idols for the American man to worship. As for me, I worship none such. I cherish, in spite of the commercial tendencies of these times, in spite of the money-mad, delirium-smitten, false idols of these days, rather a standard of manhood of my own. The manhood of America, the achievements of America, did not grow under the doctrines of Russell Sage nor any other delirious advocate of wealth alone. It was founded in the glorious American out of doors. It will flourish in that out of doors, and will flourish there alone.

A vacation grudgingly taken is to my mind an admission of national slavery. I do not believe in a national slavery, but in a general and national manhood. I do not believe in Russell Sage, but I do believe in the out of doors. The more of it there is possible in good business honor and in good personal conscience the better for all concerned: the better for employé and employer, the better for business and for success, and hence the better for civilization and America. I do not believe that men were put on earth to be miserable. I do not believe in any religion which preaches that gospel, nor in any business creed which insists upon it. I believe that the world was made for sunshine and happiness and that humanity was made for growth and development. It will never grow to its best stature when imprisoned within four walls. There is a bigger and a better world in America than that occupied by Russell Sage. There are better American ambitions than his.

Doctrines such as his mean oppression. Oppression comes in time to mean revolution. The mad commercialism of America against which I protest and rebel means human revolution in time, if it shall find no check. Before and after revolution there will remain the common sense of humanity, which knows full well that the greatest success of all is to be a man. Work is the purposeful direction of physical energy to attain certain ends, the conscious application of intelligent will for the attainment of well-defined objects. We want certain things or desire certain conditions to prevail. We set about getting them. We work for them. Pleasure is the haphazard seeking after certain ends to help pass the time. The importance of work is that it is a grave factor in matters affecting our lasting progress. The characteristic of pleasure is that its object is only temporary; it desires to please for the moment. Work is the bent bow; pleasure is the unstrung instrument. The bee is the symbol of work; the butterfly the emblem of pleasure. The bee works with a definite aim; the butterfly appears to desire nothing more than to enjoy the moment, to pass the time. We need pleas-

ures as much as we need employment. It is as essential that man should seek proper modes of pleasure and pastime, amusement and enjoyment, as that he should strive for a livelihood. We see this well impressed by Nature's methods in the life of every healthy child. The child takes to pleasures and play as normally as the duck takes to water; and the child takes to play because in its pursuit of pleasure it is preparing body and mind for the duties of life. Every time we see a fulfillment of Zachariah's vision of "little children playing on the streets of the city," every time the child seeks the pastime characteristic of childhood it is unconsciously storing up energy for its future well being. In all of its games in which running, for example, plays an important part it is strengthening its limbs, developing its muscles, aerating its blood, building up tissue and helping to remove the more readily the waste products of its system. The child does not know this, but we do. The child in seeking pleasure is following a natural impulse for the preparation for the future energies of life. Now what play is to and for the child, pleasures and pastimes are for their elders, and as the child's play works definite ends, so should our pleasures.

I have great fear of those people who think that life must be viewed as the preparation for our funeral. There are men and women in this world who practically tell us that a smile on the face is an insult to God, that a laugh is a crime and that to be happy and bubbling over with joy is an invention to call down upon ourselves divine indignation. There are people in the world who really believe that it is an infringement of God's laws to be happy; that man should go through life mournfully and with that kind of facial expression appropriate to the house of death; that all the words we speak should be uttered in that peculiar funeral tone which we associate so often with the pulpit. I am always on my guard against that kind of people. I fear them. I regard them, from the character of their lives, as the most thoroughgoing hypocrites on earth. They are always telling how God says, "If a man smite thee on the right cheek, turn to him the other also." But they are always telling it; it is not what they themselves are doing. They are always pointing out how the law of God will afflict and punish in case one should have the misfortune (?) to be of a merry or happy disposition. I believe that every smile that suffuses over our face because of honest enjoyment is a psalm of gratitude to God, and every peal of laughter, rung from a pure source, is a hymn of praise.

The good God who discriminated between man and brute gave man, of all animals, the sole right and power of laughter. I believe there is more religion, good, sound religion, in one hour spent in pure hapiness than a whole day spent in the sackcloth and ashes of melancholy misanthropy and in the false fervor of a funeral character. You may ask, "What would you recommend as the best pastime of life?" I would answer that, independent of such joyous experience as the pursuit of art and the drama, independent of a proper appreciation of the value of such exercises as field ramblings and outdoor sports generally, independent of such pleasures as social intercourse and friendly society, which should form the spice and not the food of life, the dessert and not the whole meat, independent of these and other exercises that tend to strengthen and develop the body, we should give some time to those things that strengthen the mind and soul. There may be many who laugh at such things as spirituality and idealism. We may scoff and sneer at a man who teaches us that we are not brutes, but children of a moral God, but in our heart of hearts we would not want our children taught that they are brutes, and if they are not to be so taught, then we, the parents, must see that they, being the children of God, children of the Spirit, shall rise and be brave, shall stand forth as noble and good.

In order that this may be done, I recommend as a preparation for the best and highest pastime of life the development of the love for books. No man who has made a friend of books has ever lived to repent his friendship. No man who has a library in his mind has ever lived to regret that he came in contact with the princes of the earth. For by the power of books we touch hands with the kings and princes of men. If we love books, Moses speaks to us; he is our familiar friend; Isaiah repeats for us his wondrous prophesies, Jesus delivers parables and

Paul is an active presence. If we become readers we may see standing before us a man like Marc Antony, urging the Roman people to avenge the death of the fallen Cæsar, and may hear the golden words coming from the mouth of a Savonarola; we may hear Luther arguing against the vicious forces of organized society. If we love books we may shake hands with Jefferson, be the personal friend of Lincoln, and McKinley becomes our friend for the time being. Books are the great levelers of society. In the republic of the book world kings and princes and paupers are all equal. Then, at times, we should endeavor to find our pleasures in touch with Nature. Nature is the greatest teacher that man has ever met face to face. Coming in contact with Nature strengthens, sanctifies, uplifts and rejuvenates. There is not a bird that wings its way through a pathless atmosphere, there is not a leaf that adorns in emerald hue the trees of the fields but comes to us with a sweet, unlifting, ennobling lesson. Pleasure we need, pastime we need, but let not our pleasures be without knowledge, nor our pastimes without Nature's uplifting help. There is much wisdom outside of books, but more inside them. There is much enjoyment outside of Nature's beauties, but more to be found in them.

True parents will find their pleasures nearest home. We shall find them in such occupations that we and our children can mutually indulge in them. We shall find them where a wife's smile makes the most beautiful picture and children's voices make the sweetsest music. Much pleasure may be found outside of home and the company of our nearest and dearest, but the noblest, highest and best will be found in those pastimes in which parents can have their children join them, so that together they praise God as they play and worship Him because they realize the duty of pleasure and find pleasure in duty.

EDGAR COUNTY.

The Edgar County Medical Society met in the Carnegie Library at Paris, July 25, at 2 p. m. Members present were Drs. W. A. Buchanan, F. G. Cretors, J. W. Evinger, G. W. Fuller, G. H. Hunt, W. H. Hoff, R. S. Lycan, C. S. Laughlin, G. O. Laughlin, A. K. Moseley, T. C. McCord, J. T. Musselman, D. D. Roberts, A. W. Slaughter and W. H. Ten Broeck. After routine business was transacted, Dr. D. D. Roberts presented a case which was diagnosed sclerosis of the brain and spinal cord by Drs. Buchanan, Evinger and Lycan, who were appointed by Acting President Dr. F. G. Cretors. The papers read at the afternoon session were: The Tongue as a Diagnostic Factor in Disease, D. D. Roberts; Early Diagnosis of Pulmonary Tuberculosis, W. A. Buchanan; Pulmonary Tuberculosis, W. H. Ten Broeck. These papers were discussed at the evening session which was held in the City Hall.

W. H. Ten Broeck, *Secretary.*

THE TONGUE AS A DIAGNOSTIC FACTOR IN DISEASE.

D. D. Roberts, M.D.
PARIS.

It would be very desirable if exact methods could be used to reduce the indications of the tongue to the same degree of accuracy as the analysis of the urine or the examination of the blood. While this is not the case, there is doubtless much in the teaching and experience of the older physicians which can not be put on paper; nor should it be too lightly valued by the physicians of to-day. We will try to give a few of the diagnostic signs of the tongue, which were landmarks when some of us began the practice of medicine. We will say nothing of the anatomy or nerve supply of the tongue, but will try to observe some of its diagnostic signs. Slowness of protrusion indicates an adynamic condition and, when combined with trembling, is an indication of exhaustion as well. Trembling and clumsiness may be the percurser of paralysis, as glosso-laibo-pharyngeal. The tremor of typhoid may be distinguished from that of the paralytic in that the tremor of the typhoid is seen only on protrusion of the tongue, while that of the

paralytic is seen when the tongue is at rest. The volume is due to excessive coating, to flabbiness of the muscular tissue or to relaxation, or from faulty hygiene of the organ itself. It may be from general conditions, as edema due to obstruction of the venous circulation, or from disease of contagious structures, as the tonsil.

Dryness may be due to the fact that the patient breathes through the mouth, or may indicate a general deficiency of the organs of secretion. In the latter case, it is a most valuable index to the general condition of the system.

The color of the tongue speaks of various conditions. A white tongue indicates stomatitis, while a yellowish pearly color, which is thought to be due to the elimination of tauricholic acid from the salivary glands, indicates a bilious and jaundical condition of the system; large red papillæ showing through a white coating is an indication of scarlet fever, measles or influenza, while a livid and blue tongue is an indication of mechanical obstruction to the flow of venous blood; a grayish white tongue with here and there a red spot is a symptom of gastric or gastro-intestinal trouble, while in children a red tip should lead us to look for tenia. The coating of the tongue is composed of epithelium, micro-organisms and remains of food, and it is reasonable to suppose that some of the food particles come from the stomach. In affections of the liver and duodenum, the color is a yellowish white, and this color is seen in malarial fever with congestion of the liver.

In simple malaria, we have a thickened tongue with a yellowish fur. This coating is arranged in lines parallel to the circumvallate papillae and show in two well-marked lines, like seried ranks or rows of papillæ at an obtuse angle to the median raphe or center of the tongue. There are usually indentations made by the teeth on each side of the tongue. There is an endemic type of tongue which is due to drinking impure water, to acute diarrhea, dysentery, ptomain poisoning, or to fermentative processes so often seen in intestinal diseases. One of marked interest is a large flat tongue fissured at times, but with a light furring, at other times angry and beefy and greately irritated. In my opinion, this tongue is found in patients who eat large quantities of rich food and drink alcoholic liquors.

While this paper is short and very incomplete, we can say with confidence that the color and appearance of the tongue are still adjuncts in diagnosis which must be reckoned with even in this progressive and enlightened age.

JO DAVIESS COUNTY.

The Jo Daviess County Medical Society held its regular quarterly meeting in the parlors of the Warren Hotel, Warren, July 12, 1906. The president called the meeting to order and the following responded to roll call: Drs. Stafford, Smith, I. C., Godfrey, Miller, Bench, Phillips, Keller, Tyrrell, Bucknam, Birbeck, Smith, D. G., Best, Nadig Kaa, Kreider, and Kolb of Apple River, and Percy of Galesburg as visitors. Minutes of previous meeting read and approved. The censors failing to report the applications of Drs. Gottral and Renwick, they were held over for the next meeting. An application of F. K. Kolb of Apple River, was read and received. Dr. Phillips then read a very excellent and well prepared paper on How to Live Longer.

Dr. Percy, president of the Illinois State Medical Society, then read a paper on The Borderland of Insanity, which gave the members many valuable points on this dreaded and difficult subject. After dinner, which was supplied by the Warren Division, Dr. Percy again took the floor and gave a lengthy and edifying talk on the work of the State Society, as well as the value of the necessity of vacations, travel, sociability, and post-graduate work, together with the physician's being a unit in promoting legislation. A vote of thanks was tendered Dr. Percy for his presence and valuable aid. The question of Life Insurance Fees was taken up and, after a full discussion, the president appointed a committee of three, Dr. Tyrrell, Kreider and I. C. Smith to draw up resolutions and have every member subscribe his name thereto.

The following is the report:—Owing to the reduced fees that the Insurance Companies have been imposing on the physicians of this country, the Jo Daviess County Medical Society, in regular session, assembled in Warren, Ill., July 12, 1906, passed and subscribed to the following resolution:

Resolved, That we, the undersigned, members of the Jo Daviess County Medical Society, and any other reputable physicians of said County, do hereby agree by subscribing our names to the following resolution: That we will not make an examination of any old line Life Insurance Company for less than Five Dollars ($5.00) or for any mutual or fraternal Insurance Company for less than Two Dollars ($2.00) and that any physician who would violate this resolution, should be deemed unworthy to be met in council.

Everyone present signed the above and those not present will be given an opportunity. Next meeting will be held in Galena, in October.

D. G. SMITH, *Reporter.*

MC'LEAN COUNTY.

The July meeting of the McLean County Medical Society was held at the City Hall at 8 p. m. July 12, 1906. Meeting was called to order by President Bath. Minutes of last regular meeting were read and approved. Dr. Mammen moved that the question of delegating business of Society to a committee be laid over until September meeting. Seconded and carried.

Dr. R. D. Fox reported for the Sanitary Committee on the larger dairies:

	No. bacteria present.
Sanitary Dairy	93,000 to 298,000
Snow & Palmer	89,000 to 136,000
Snow & Palmer; hospital samples	86,000 to 100,000

Pasturization reduces number bacteria.

No supply is ideal. There is some sediment present. Conditions must be improved. Solids and butter fat are not bad.

Dr. Whalen, Health Commissioner of Chicago, was then introduced and read a very excellent paper on the Influence of Sanitary Measures on Mortality. He stated that the registration reports of Chicago divide the causes of death into three classes: those from disease, 92 per cent.; from violence, 1 per cent.; from ill-defined causes, including old age, 7 per cent. As there are few deaths from uncomplicated old age, the greater part of class three may be added to class one, making the number of deaths from disease 99 per cent. The dangers arising from contaminated ground are due to the fact that air penetrates the soil to a depth of 20 to 30 feet and that there is a circulation of the ground air and surface air, the former also forming a part of air we breathe. Hence the importance of a dry site for dwelling, which gives light and cheerfulness; a ventilation sufficient to carry off impurities; a system of immediate and perfect sewerage removal; a supply of pure water, with proper removal of same, insuring perfect cleanliness of all parts of house; a construction of houses which shall be absolutely dry from foundation to roof.

The speaker emphasized the value of concrete floors to prevent the exchange of noxious gases from soil below. As the best proof of the possibilities of improved sanitation, Dr. Whalen stated that from that source alone the expectancy in Chicago had been increased nearly 16 years and that now one-fourth of all deaths might be prevented by improved sanitary methods.

Dr. Whalen was accorded a vote of thanks by the Society. After some discussion the meeting adjourned. Members present were Drs. Sloan, Fox, A. L. and R. D., Smith, Lee, Smith, G. R., Little, Chapin, Welch, Yolton, J. L. and R. C., Hart, Mammen, Vandervort, Bath, McCormick, N. K., Rhodes.

T. W. BATH, *President.*
O. M. RHODES, *Secretary.*

The August meeting of the McLean County Medical Society was held at the residence of Drs. J. L. and R. G. Yolton, on the evening of August 2, the council

chamber being occupied by another meeting. Owing to the delay consequent on changing the place of meeting, the regular business of the Society was deferred, and the speaker of the evening introduced.

Hon. John L. Sterling, Congressman from the Seventeenth District, addressed the Society on The Pure Food and Meat Inspection Laws. He said that originally the trade between the states was intended to be free, consequently Congress should have power to regulate commerce between states. As a result of this there has arisen the Oleomargarine Law, the R. R. Rate Bill Law, the Pure Food Bill, the Meat Inspection Bill, etc. There is a tendency to give Congress more power. The provision of the law is to improve foods and prevent mislabeling. Congress now has full power in District of Columbia, territories and between states. The purpose of the pure food laws are to benefit public health, to improve morals, and to prevent sale of habit-forming drugs, without knowledge of consumer.

The speaker read a long list of patent and proprietary remedies which conflict with the standards of strength and purity established by the Pharmacopea and National Formulary or which were mislabeled. He also spoke of methods commonly used to adulterate such foods as milk, sugar, coffee, rice, meat, baking powder, tea, olive oil, honey, etc., etc. A manufacturer can now sell his goods within the state manufactured, but can not ship to other states, without making himself liable. There are $3,000,000 appropriated annually for the inspection of meat. The law provides that every animal must be inspected on the hoof at time of slaughter. Inspection of the carcass and of the package and can is also provided for. Must then be tagged, inspected and passed.

It was formerly supposed to be inspected and guaranteed by the government, but such was not the case. The sanitary conditions of packing houses must be improved. The Secretary of Agriculture has power to see that above improvements are made. On motion, a vote of thanks was extended to Mr. Sterling for his address. Adjourned.

T. W. BATH, *President.*
O. M. RHODES, *Secretary.*

MENARD COUNTY.

The Menard County Medical Society had a meeting July 19, 1906. Dr. Hole read a paper, the title of which was

ACONITE, VERATRUM AND DIGITALIS.

The above are three of the most potent, as well as the most useful of the vegetable members of the Materia Medica. Aconitum Napellus is natural in Europe, Asia and America. The root is dark in color and resembles, to some extent, horseradish, and also has some resemblance to celery. When chewed it produces a feeling of tingling and numbness on the tongue and lips. The active principle is an alkaloid, aconitine, freely soluble in water, alcohol and ether. There are three or four other alkaloids, but, as yet, they have not been sufficiently investigated to determine their value.

Physiological action: Aconite is a powerful depressant to the circulatory system, it slows the heart by stimulating the peripheral vagi and lowers blood pressure by directly depressing the heart through its motor ganglia.

It slows respiration by its direct depressing effect on the respiratory center. It acts as a sedative to the stomach, and, frequently, lethal doses do not cause vomiting. It reduces the temperature by increasing the activity of the skin and glandular system, thus increasing heat dissipation.

Toxicology: Slow weak pulse, later becoming rapid and irregular, respiration slow and feeble, tingling and numbness of the lips, tongue and extremities, subnormal temperature and collapse. The heart is arrested in diastole.

Therapeutics: Useful in the early stages of all acute inflammatory diseases, especially when of asthenic nature; in the acute infectious diseases of childhood; sometimes useful in acute hypertrophy of the heart, without valvular disease; in all conditions of increased arterial tension, in which there are no organic

changes in the heart or its valves, as a diaphoretic and antipyretic, in neuralgia internally and locally. In order to get full therapeutic effect, it is necessary to push to slight physiological effect.

Veratrum Viride: The dried rhizome and root of veratrum viride, American hellebore, is a stout rich, perennial herb, luxuriant in swamp lands in Eastern North America. Its active principles are the alkaloids. Proto veratrine is the most important. It is practically insoluble, and its uses are the same as the crude drug. Jervine, which is one-half the alkaloidal strength of the veratrum, is soluble in the alcohols and chloroform. There are three other alkaloidal constituents, which are physiologically inert.

Physiological Action: It lessens the force, tension and rate of the cardiac contraction by its depressing effect on the vasomotor centers and the heart muscle itself, and by stimulating the inhibitory nerves of the heart. The respiration is affected in the same manner, but to less degree than by aconite. It is irritating to the stomach, and, frequently, medicinal doses will produce nausea and vomiting. In large doses it is emeto-cathartic.

Toxicology: The toxic dose causes nausea and vomiting, slow weak pulse, vertigo, impaired vision, slow breathing and great muscular weakness. Death results from asphyxia or syncope.

Therapeutics: In excessive hypertrophy of the heart, without valvular lesion, in aneurism with much pain and a full and strong pulse, it may be used as a cardiac sedative and febrifuge in the beginning of any of the acute inflammatory diseases, is highly lauded by some systems of medicine as a remedy for croupous pneumonia; it is also useful in puerperal eclampsia and acute mania. The alkaloid veratrine, which is a combination of the active alkaloidal strength of veratrum, can be used internally as well as the crude drug, and it is also used locally in ointment for acute superficial neuralgias.

Digitalis Purpura: (Foxglove, dried leaves collected from plants of the second years' growth, at the commencement of flowering). Digitalis is a biennial or perennial herb of Central and Western Europe, and is largely cultivated as a garden flower, as well as for its medicinal properties. The alkaloids of the leaves are digitoxin, digitophyllin, and digitalin. The German digitalin is a mixture containing about 50 per cent. of digitonin, an alkaloid obtained from the seeds of digitalis, and 5 or 6 per cent. of true digitalin. The alkaloids of digitalis are soluble in water and in 98 per cent. alcohol.

Physiological Action: It slows the pulse and raises the blood pressure. The lengthening of diastole is the cause of the slowing of the pulse and the longer diastole is due to the stimulation of the vagi. The blood pressure is increased by the direct action of the drug on the blood vessels and the stimulation of the vasomotor center.

Digitalis affects respiration only in toxic cases, and then it slows the rate. Large doses frequently cause nausea, vomiting and diarrhea. There is no noticeable diuretic action from digitalis in health, but when urine is scanty from low arterial tension, digitalis often produces free diuresis. It is not thought to have any specfic diuretic effect on the renal epithelium.

Toxicology: Nausea, obstinate vomiting, disordered visions, headache, slow, full pulse, later rapid, thready and irregular pulse, sometimes, at a late period, there are convulsions. Occasionally, there is poisoning from the cumulative effect. After having administered digitalis for a long period, the first symptoms are precordial distress, occurrence at the wrist of the heart beats in couples, and irregularity of the pulse.

Therapeutics: Stevens says that digitalis fills three very important offices: First, it is a powerful cardiac stimulant; second, it slows the heart and regulates the rhythm; and, third, it acts as a diuretic. Digitalis is useful in all conditions in which toning and stimulating of the heart and arterial system is indicated, in irritable heart, in venous engorgement, dilated heart, and all valvular diseases of the heart, especially those in which there is regurgitation. It is said to be of but little value in aortic regurgitation, and to be contraindicated in aortic stenosis, and of no value or very limited value in stenosis of any of the cardiac orifices.

In exophthalmic goiter, digitalis sometimes lessens the frequency and quiets the tumultuous action of the heart. In cardiac and renal dropsy it is a valuable diuretic. It is often used in pneumonia as a cardiac tonic, and is also used in any or all acute or chronic conditions, in which there is heart weakness. Potter says that digitalis is especially applicable to the blonde, and to those of sanguine and indolent temperament. By way of comparison and contrast, I have tabulated the physiological action of the three different drugs on the heart and circulatory system, the respiration and the digestive system.

Aconite: Slows heart by stimulating vagi; lowers blood pressure by directly depressing heart through its motor ganglia. Slows respiration by direct depressing effect on respiratory center. Acts as sedative to stomach and frequently toxic doses do not cause nausea.

Veratrum: Lessens force, rate and tension of cardiac contraction, by its depressive effect on the vasomotor system, and by stimulating the inhibitory nerves of the heart. Acts directly on the respiratory center, slowing the heart, but to less extent than aconite. Irritating to stomach; medicinal doses frequently cause nausea, and large doses are emeto-cathartic.

Digitalis: Slows pulse by lengthening diastole, longer diastole due to stimulation of the vagi, blood pressure increased by direct action of drug on blood vessels and stimulation of the vasomotor system. Medicinal doses do not influence the respiratory rate, but toxic doses slow the rate. Large doses frequently cause nausea, vomiting and diarrhea.

In this very superficial examination of these remedies, one is impressed with the similarity of the action of aconite and veratrum, but sees clearly the very different physiologic manner in which each accomplishes its purpose, also how differently one should rationally apply them for results in a given case and condition. The very different, almost diametrically opposite physiological effects and therapeutic results of digitalis are also apparent. Personally, I am much impressed with the fact that I do not know as much physiology, materia-medica and therapeutics as I should know to be as successful as I have an ambition to be in the rational application of medicines in abnormal conditions. The thought also comes to me that there are four very essential elements to success, in the rational practice of medicine: that we have, at least, a working knowledge of physiology and anatomy, in order to be able to know the normal and its very many and wide variations; that he have a thorough knowledge of the pathology of the diseased condition which we are treating; that we have an intimate knowledge of every drug we use, and that we know a few drugs well, rather than to have a little knowledge of many. I think a knowledge of the materia medica of the crude drug is essential, also the action and uses of the active principles contained in it, its chemistry, physiologic and therapeutic effect, and, finally, the most essential thing is that we have sufficient common sense with it all, to rationally apply the little knowledge we do possess.

DISCUSSION.

Dr. Hurst said that in the administration of these three drugs he would study age, and the condition of the heart and lungs. He thinks that as good results were received formerly with their use, as is gotten now from later drugs of coal-tar composition. He believes in the careful use of these and discontinues the dose when results are obtained. He used veratrum in a case of cerebrospinal meningitis, in a family where he was called to see a case of malarial fever and was present when the cerebral case was taken sick. In half an hour, delirium with convulsions ensued. With an ice cap on the head and two drops of tincture of veratrum every forty minutes for forty-eight hours, he cured this case. If you get an over-dose of veratrum in any case, whisky overcomes the depression. He can do more with veratrum than with digitalis. In a patient with a pulse of 120 to 140, and irregular heart action, veratrum will reduce it in a little while to 80, 70, or 60, if necessary. When patient perspires, you may look for results. He heard Norwood, when at college, lecture on veratrum and the following year Prof. Ingals recommended its use, which he declined to do before, in puerperal convul-

sions. He believes that there is no preparation as good as Norwood's and has thrown out other makes.

Patient No. 1. Puerperal convulsions. Bled, emptied uterus without improvement. Gave veratrum and symptoms stopped but patient succumbed.

Patient No. 2. Five days after delivery, seized with convulsions, breaking two molar teeth. Gave heavy doses of elaterium hypodermically, hot water in cans around the body until blistered and gave veratrum. Patient survived and since has given birth to a healthy child without any trouble. Norwood claims no deaths ever followed use of veratrum.

Aconite: He uses aconite where he has congestion in any part of the body, but not in inflammation. He has no use for the alkaloid. One can tell by tasting it if the tincture or fluidextract is strong, with tip of tongue. Aconite and bromids are good to use together.

Digitalis: In exophthalmic goiter, the infusion of digitalis outclasses everything. He has no use for thyroid extract and other agents of a later day. He has used one-half ounce of the infusion three times a day, for six months in one individual with a cure. He does not believe there is any danger of accumulation. The only danger is from an overdose. He considers one ounce an overdose. He has used the infusion for eighteen months with no bad symptoms, then three or four overdoses choked the circulation and the finger nails became blue. He believes that digitalis will act regardless of fever. He does not use coal-tar products for they are dangerous. He thinks many people have been killed by them.

Dr. A. L. Brittin:—This is a very valuable paper. Veratrum is a neglected drug. There is no better drug for epistaxis or secondary hemorrhage from any cause. Dr. A. E. Prince used it first in my experience and told me that his father, Dr. David Prince, always considered it the most valuable drug to use in hemorrhage. Large doses are given, repeated often until the pulse reaches 40 or even 30, when hemorrhage ceases. In pneumonia, there is no better drug than veratrum, using heavy doses at the start. When a boy, I knew of a case in my neighborhood that had convulsions for two days and nights and was told afterward that veratrum cured her. I have had three cases, one of which terminated fatally.

Digitalis: To some people digitalis acts as a narcotic, producing cerebral narcosis. Aconite is a drug worth studying. I think less of the coal-tar products should be used. Some one calls acetanilid the cruel drug. Hole thinks that digitalis has an accumulative action. He reports symptoms of autointoxication he has seen after prolonged use, namely, anasarca, rapid pulse, and seeing objects.

Dr. Rothert reports a case for diagnosis. Married woman, five children, 45 years old, fleshy, sick now four or five weeks. Had pain in region of heart; was first taken sick with chill, temperature 100 to 101 degrees F., pulse 120. He gave her, for pain, one-half grain morphia, and strychnia for circulation. Two days later, a swelling appeared over the collar bone, above site of pain. He made a diagnosis of rheumatism and used very heavy doses of salecin with no relief. Pain and swelling spread to other collar bone, and over entire breast, but breast itself was not swollen or he would have thought of abscess of the breast. There was some swelling of the armpit but not of the glands. Dr. Rothert said she had received an injury several weeks before the chill, but could not see any association of the two. The Society thought the injury had something to do with the trouble or else it was a malignant disease.

Dr. Brittin reported a case of a male, 49 years, spare build. There was an enlargement at the sterno-clavicular articulation. He had pain in the shoulder and neck which had increased. Four or five months ago the tumor was as large as one's fist and the patient asked Dr. Brittin to incise it, but he declined and asked him to come to Menard County Medical Society for diagnosis. He failed to come, but six weeks later came into his office with pus under skin, which was incised. There is still induration and pain, but no pus at present. At first he thought of a subclavian aneurism, but now is of the opinion that it is of specific origin.

IRVING NEWCOMER, *Secretary.*

MONROE COUNTY.

The annual meeting of the Monroe County Medical Society was held in Waterloo, June 25. Dr. Sennott, president, and Drs. Heidelberg, Fults, Pantler, Kuehn and Adelsberger were present. The following officers were elected for the ensuing year; President, Dr. O. Kuehn, Burksville; vice-president, Dr. H. Heidelberg, Hecker; secretary, Dr. L. Adelsberger, Waterloo; treasurer, Dr. N. B. Pantler, Waterloo; censor, Dr. S. Kolenbach, Columbia; delegate, Dr. J. S. Sennott, Waterloo. Dr. Sennott reported two cases of pleuro-pneumonia with effusion, in which the ribs were resected and recovery was complete; also a case of appendicitis in a young man, when appendix, seven inches in length, was removed. An essay by Dr. Kuehn on Pernicious Anemia led to an interesting discussion by the members present. Adjourned to meet in Columbia, in special session, July 17.

L. ADELSBERGER, *Secretary.*

A special meeting of the Monroe County Medical Society was held in Columbia, July 17. Addresses were made on the following subjects: Eczema, Dr. S. Kohenbach; Neuritis of Arm, Dr. J. C. Fults; Pyrosis, Dr. Schnellschmidt; Uterine Hemorrhage, Drs. Fults and Pantler; Cancer of Uterus, Dr. M. G. Mixon; Vesico-Vaginal Fistula, Dr. J. S. Sennott. General discussion followed the delivery of each address, the meeting being the most gratifying one held by the Society since its reorganization.

L. ADELSBERGER, *Secretary.*

MORGAN COUNTY.

The regular monthly meeting of the Morgan County Medical Society was held July 12, 1906, with President Dr. Josephine C. Milligan in the chair. Sixteen members were present. The subject of the evening was Puerperal Eclampsia. Dr. H. C. Campbell read a paper on the subject with reports of two cases. Dr. T. A. Hardesty read a detailed report of three cases. The following are extracts from Dr. Campbell's paper, and from the reports of cases:

Of the causes of puerperal eclampsia little can be stated, definitely, though there are a number of remote causes which tend to bring about this condition. Among these may be mentioned primiparity, plural pregnancy, heredity (though this has not been well established), mental condition, position of the child in utero, constipation, and, in consequence of this, probably the most important of all causes, deficient elimination of toxic materials. The exciting causes are believed to be more the culmination of the predisposing conditions and at times very little is needed to precipitate a paroxysm. A sudden, partial or complete suppression of urine; prolonged or painful uterine contractions, with a rigid unyielding os; a sudden fright or pain caused by a hand on the abdomen or the examining finger at the cervix; profound emotion, etc., may be the exciting cause.

The pathology is even more obscure than the cause. The postmortem changes usually found are anemia, generally of all organs; a congestion of the cerebral cortex; occasionally, slight hepatic apoplexies; a fluid condition of the blood and edema of the lungs. The symptoms are usually pronounced and, once seen, are not likely to be forgotten, nor is the physician, with a single experience, likely to be taken by surprise when the convulsions come. The patient usually gives a history of edema of the limbs, scanty or a diminished amount of urine. There is, usually, headaches, dizziness, ringing in the ears, nervous disturbances, epigastric pain, amaurosis, a feeling of general debility, a stupor, or, perhaps, insomnia, mental excitement or despondency; while the urine usually contains albumin as well as casts, epithelium and blood cells, there are numerous instances where no albumin can be found. All these symptoms, or as many of them as may be found in a given case, may subside after purgation and diuresis and the patient may fall into a quiet sleep, and awake feeling refreshed, and go on to the end of her pregnancy. This happy issue, however, rarely occurs. Usually, the premonitory symptoms, after going on for a few hours or even days, suddenly terminate in convulsions, as described above, which last from ten to twenty seconds, and then give way to coma. Rarely does the patient have but a single attack, usually there is a recurrence and the attacks continue at varying intervals over a period

of time not usually exceeding forty-eight hours, the number of attacks depending on the severity of the individual case.

The prognosis in any case of eclampsia must be regarded as grave. Statistics show a large mortality, both maternal and fetal.

What shall we say of the treatment of a disease whose pathology is so obscure? In all cases, there are four indications; namely, to control the convulsions, to support the heart, and to establish elimination through the bowels, skin and kidneys as soon as possible, and, where the seizure occurs during labor, to empty the uterus as rapidly as can be done without injury.

I wish to report two cases which have come under my observation, giving the lines of treatment employed and the results attained.

Case 1.—A farmer's wife, primipara, age 24, had enjoyed a fair degree of health during the pregnancy, except that, as her physicians remarked, "She seemed to need a tonic to keep her up." Several examinations of the urine were made, with negative results, except that there was a low specific gravity, about 1010 or 1012, no albumin nor casts. She had attended to her household duties during the entire summer. I first saw the patient at 6:30 a. m. She had been in labor about three and one-half hours, pains were coming frequently and the dilation of the os was about complete. About this time, expulsive pains were lacking, yet there was abdominal pain, headache and drowsiness, the patient seemed to fall asleep with half-closed eyes, rousing up occasionally to complain of headaches. A little before 8 a. m., she was taken with a violent convulsion, followed by deep coma. Immediately, she was placed crosswise of the bed, forceps applied and labor terminated as speedily as possible, without doing injury to the parts. Immediately after delivery, there was another convulsion, the coma continuing. Thirty grains of chloral were given per rectum and 1/100 grain of nitroglycerin hypodermically, hot water bottles were placed around her, she was snugly wrapped in blankets, and given 1/10 grain pilocarpin, hypodermically. Pulse was weak and ranged from 120 to 130. Patient was catheterized and, on examination, the specimen was found to contain albumin 10 per cent., casts, epithelium and leucocytes. Nitroglycerin and digitalin were given alternately every three hours. There was profuse perspiration but no diuresis and efforts directed toward elimination through the bowels were unsuccessful. Thirty hours from the time of the first convulsion, there was another seizure and, three hours later, the patient died. The labor began at full term and the child, a boy weighing ten pounds, exhibited no ill effects of the disease which caused his mother's death.

Case 2.—A farmer's wife, aged 20, in her second pregnancy. Her first pregnancy and confinement were uneventful, except that final delivery was made with forceps, for no known reason, except that the attending physician got tired. The period of gestation was about 8½ months. Labor pains began at 3 a. m., and continued with increasing frequency and severity until 9 a. m., when they seemed to stop. The patient complained of severe headache, there was marked edema of the limbs and puffiness under the eyes. No examination of the urine had been made as the family had not thought it necessary to consult a physician till labor had begun. Patient was restless, had epigastric pains and felt dizzy. At 9:30 the expected happened, the patient was taken with a convulsion. A hypodermic of 1/100 grain of nitroglycerin was given, with one hand in the vagina. The cervix, which was partially dilated, was dilated as rapidly as possible, forceps were applied and a living child delivered. A convulsion preceded the delivery, which occurred at 9:30 a. m. A third convulsion following in 15 minutes, 15 grains of chloral, and 26 grains of the combined bromids of potash, ammonia and soda were given per rectum. Five more convulsions occurred at intervals of about one-half hour, the chloral and bromids were repeated three times in three hours. Hot applications were put about the patient and extra covering on the bed. The pulse at this time was 140 and weak. Coma was not profound at this time (11:30 a. m.). She was given one-half grain of calomel and one-sixth grain sparteine, dry on the tongue and, by a little persistent effort, a half glass of water was given, the calomel repeated in one-half grain doses every twenty minutes until three grains were given, each tablet being given with a half

glass of water. One and a half hours after the last calomel tablet was given she took Epsom salts, a teaspoonful in a half glass of water, also sparteine, one-sixth grain. By this time (2:30 p. m.), the patient was perspiring freely. The pulse had dropped to 124, she was arousing from her stupor, the headache was gone and she was feeling better, though still, to some extent, under the influence of hypnotic. Directions were given to repeat the saline every hour until the bowels moved freely. I visited the patient again at 9:30 p. m. The bowels had moved freely and a quantity of urine was passed, the amount not estimated. There had been no recurrence of the convulsions, the patient was awake but drowsy, pulse 120. She was given a warm sponge bath, and the clothing of herself and the bed changed. I visited her again the next day at 6:30 p. m. The bowels had moved freely and about four pints of urine passed during the twenty-four hours. Edema was greatly diminished and the patient was feeling very comfortable. The pulse was 84, slightly irregular; temperature 99.4° F. She was given a tablet containing nitroglycerin, digitalis and belladonna, for a few days. There was an uneventful and rapid convalescence. The baby weighed 6½ pounds, was rather blue but thrived. A specimen of urine boiled the next day after delivery was almost solid with albumin.

Dr. T. A. Hardesty reported in detail three cases of puerperal eclampsia.

Case 1.—Primipara, labor at term, no premonitory symptoms elicited, except great edema affecting the legs. A convulsion occurred before the patient was known to be in labor, and the child's head was born long before the arrival of physician or suspicion of labor by family. The child was dead. The woman recovered, but was said to have died of eclampsia two years after.

Case 2.—Primipara, sister had died in eclamptic seizure. Seven months pregnant, feet and legs swollen, was suddenly taken with convulsions. These recurred at intervals of three or four hours, with coma after each seizure, lasting a half hour. I gave morphin and atropin hypodermically and chloral by rectum. After forty-eight hours, labor began naturally, and was completed in three hours, with two convulsions during labor. Rapid recovery of mother.

Case 3. — Primipara. Edema of feet and legs. Labor at or near term, os slightly dilated, contractions good, convulsions one to two hours apart. Os was dilated manually, podalic version performed, and child delivered. Morphin, calomel, chloral and chloroform were used. No fetal heart sound elicited before operation, child dead, mother made rapid recovery.

DISCUSSION.

Dr. Pitner advocated prompt delivery with elimination.

Dr. Woltman reported a case in the Cook County Hospital in which venesection seemed to hasten recovery.

Dr. Hairgrove questioned the necessity of delivery in many cases before term, and recommended elimination and sedative treatment instead of the emergency and prophylactic, principally eliminative, treatment until full term.

Dr. Norbury advocated hypodermoclysis, using large quantities of fluid.

Dr. Bowe advocated prophylaxis, especially in the matter of examining the urine during pregnancy. A constantly decreasing amount of urea in the urine was a danger signal and when the descending scale reached a certain point, if it could not be turned, labor should be induced artificially.

Dr. Campbell, in closing, said that these cases are most likely to occur in the country or in families that have not thought it necessary to consult a doctor in advance, and, five miles from one's office, with only one or two frightened old women as assistants, there is little opportunity for the application of scientific measures.

MORGAN COUNTY.

The Morgan County Medical Society met in regular session, with Dr. A. L. Adams in the chair. Dr. E. F. Baker read a paper on the Septic Tank System of Disposal of Sewage. For ages, it has been customary for cities to divert their

sewage into running streams and rivers as far as possible. This is all right, where such streams exist, till somebody farther down the stream objects. Cities along streams have equal rights, and object to having water constantly polluted with the sewage of cities above them on the same stream. In Jacksonville, the city sewage is discharged into the Mauvaisterre Creek, a stream that is almost dry part of the year, and as the amount of the city's sewage increases, the condition becomes more and more unsanitary, to say nothing of complaints that may arise any day from those owning land farther down the stream.

In the case of Chicago versus St. Louis, the courts have decided in favor of the former city. Her proximity to Lake Michigan enables her to discharge a sufficient amount of water into the river to overcome the damage done by the sewage, and the St. Louis water supply was proved to be benefited rather than injured by the opening of the Chicago Drainage Canal. Inland cities are rapidly growing throughout the country, and are less favored. Although sewage will purify itself in running water, where there are no streams some new system has to be devised. The Septic Tank System calls into existence no new laws. The effect is not chemical, but is a process of fermentation. The Septic Tank consists of a walled and covered reservoir into which the sewage is discharged. It must be large enough to hold at least twenty-four hours sewage deposited therein, and in this water-tight reservoir, protected from light and currents of air, there develops myriads of anaërobic bacteria, such as already exists everywhere. These bacteria, produced below the surface of the water, destroy all pathogenic bacteria, and hasten the decomposition of all organic matter contained in the sewage. The sludge or ash, remaining after all organic matter is destroyed, rises to the top and forms a heavy crust over the contents of the tank, which further shuts out the air and increases the action of the bacteria below the surface. This sludge forms but a mere fragment of the sewage and has little fertilizing power. Very little noxious gas is given off during this process of decomposition, and the water after passing through the tank and being subjected to the action of the bacteria for at least twenty-four hours, is clear and innocuous.

At Lake Forest, where they use this system, the outlet from the Septic Tank opens into the lake not far from the city water intake. Champaign has the oldest system in the state, being about seven years old. Urbana, Belleville, Edwardsville, and a number of other important cities in the state use this system. The system is both practical and economical. When once installed, it needs little repair and no attention. There is no labor connected with it except that the sludge is cleaned out every two or three years. Any size works well. A single house, a hospital, a village or city may have one or more septic tanks for the disposal of its sewage.

This is the general plan of the Septic Tank. There are some variations and contrivances, such as the automatic storm valve, which side tracks the storm water without going through the tank; the baffle board, which retards the flow and keeps the crust of sludge from floating off; the dividing wall, etc. The tank at Champaign is about forty, by sixteen, by eight feet.

Dr. T. J. Pitner opened the discussion. A number of systems of disposing of sewage have been tried and most of them have proved failures, largely on account of the cost. The chemical disposal of sewage and filter beds are very costly systems. In Berlin, they have a vast irrigation system for the utilization of the sewage, costing about $13,000,000. In some of the cities of India, the same process has been used much more successfully. The sewage is directed in pipes to the farms that it is to irrigate, and it is noticeable that farmers, working on the lands so irrigated, are not affected by diseases arising from the sewage, as the disease germs are destroyed by the putrefactive germs. In some places, sewage has been filtered through beds of coarse broken rock, etc., each bed becoming finer. Even in the Septic Tank System, it is well to have strainers to strain off paper and the coarser sewage before entering the tank.

An improvement on the plan spoken of by Dr. Baker is to use the water after passing from the tank through pipes near the surface for irrigating lawns and gardens. The Septic Tank System is simple, effective, inexpensive and applicable

to this city. One could be placed at the mouth of each sewer, making two or three, as might be considered best. Adjourned.

A. L. ADAMS, *Vice-President.*
D. W. REID, *Secretary.*

STEPHENSON COUNTY.

The Stephenson County Medical Society held a meeting in Freeport, July 11. 1906, at the Court House. Dr. W. F. Karcher was appointed to act on the committee for State Medical Defense. A resolution was adopted, in which the members of the County Society were urged to aid in the regulation of the charges for fraternal and old line insurance examinations. Dr. A. E. Smith reported what had been done by the committee which had charge of the proposed Post Graduate school. The committee was retained and ordered to report at the next meeting. Dr. J. F. Percy was present and added much to the interest of the meeting by taking part in the general discussions. In the evening he addressed the members of the County Society. Following is a list of the officers for the next year, elected at this meeting: President, Dr. M. M. Baumgartner; vice-president, Dr. Linda K. Hutchins; secretary, Dr. Mary L. Rosensteil; treasurer, Dr. C. L. Mease; delegate to the State Society for two years, Dr. R. J. Burns; censor for three years, Dr. E. Brockhousen; delegates-alternate, Dr. N. J. Rideout.

MARY L. ROSENSTEIL, *Secretary.*

WAYNE COUNTY.

The regular meeting of the Wayne County Medical Society was held at the office of Dr. C. O. Truscott, in Cisne, Wednesday, July 18, 1906. The meeting was called to order by the president, Dr. W. M. Johnson, at 10:30 a. m. Members present were: Drs. G. A. McDonald, W. C. Sibley, David Hilliard, W. M. Johnson, C. O. Truscott and J. P. Walters. The minutes of previous meeting were read and approved. The applications of Dr. J. L. Young, of Rinard, Dr. P. M. Gray, of Cisne, Dr. C. E. Johnson, of Johnsonville, and Dr. F. F. Davis, of Jeffersonville, were read and, by motion of Dr. Truscott, the rules were suspended and the applicants were elected to membership by unanimous vote.

A communication from a specialist, in which he proposed to come to Fairfield on some Sunday and operate on any and all cases of eye trouble in the county free of charge, for persons who are not able to pay for such, was presented to the society and freely discussed by all present. By some it was claimed that Wayne county was well able to take care of its own indigent eye cases; that any specialist who would come to Fairfield, from a distance of 100 miles or more, to hold a free clinic, was seeking either practice or notoriety, or both; and that the county could pay for the pauper work, to some beginner, who needs the work as well as the fee. Others looked upon the proposition more favorably, since it gave the physicians of the county an opportunity to witness some difficult and delicate operations, thereby better preparing them to care for their own patients in the future; then the specialist idea should be encouraged more by general practitioners, many of whom are more or less specialists themselves, having a particular liking for certain departments in the great field of general practice; that he who studies specializes more, he likes his work better, seeks literature and searches for cases and is better prepared to successfully treat his particular class of cases and, ere long, is sought for counsel. The subject was warmly and freely discussed. It was the prevailing sentiment of the Society that no eye specialist be called to hold a free clinic in this county.

Dr. B. A. McDonald's paper, The Relation of the Country Practitioner to the Specialist, was first on the program, but, as the subject matter had been thoroughly discussed, while the previous question was up for discussion, the author refused to read the paper, claiming that the grounds had all been covered in the matter just discussed.

The noon hour having arrived, the Society adjourned for dinner. Dr. Truscott informed us that he was prepared to entertain all of us. We went to his residence, where a rich and bounteous dinner was served. To make the noon hour more pleasant, Dr. Truscott had arranged for the Cisne Clover Leaf String Band to entertain us with music. This band is composed of ladies, who did their part well.

After dinner, Dr. C. O. Truscott read a paper on The Benefits of a Medical Society. The ethical, educational, professional, social and financial benefits were all very carefully considered. The paper plainly shows that the Society gives an opportunity to each individual member to increase his knowledge, to compare his experiences and to adjust his mistakes. At the Society he gets new ideas, reports his success and failures. The benefit to all is mutual. A vote of thanks was tendered Dr. C. O. Truscott for the royal entertainment the Society received at his home. His efforts to make it pleasant for each individual member of the Association were successful, and were duly appreciated by all. A similar vote of thanks was tendered Dr. B. E. Garrison for the royal manner in which he entertained the Society at his home in Wayne City, on the 10th of last April, which, by some mistake, failed to be published with the minutes of the meeting.

The Society adjourned to meet at Fairfield on the second Wednesday of October, 1906.

W. M. JOHNSON, *President.*
J. P. WALTERS, *Secretary.*

CORRECTION.

DR. BOUTON OBJECTS.

Dr. W. C. Bouton, of Waukegan, has called our attention to several errors in the July JOURNAL, page 64, in which the name Bowden was substituted several times for his own, and, as if that were not enough, two more errors occur on page 115 of the August JOURNAL in which the name of Dr. J. S. Beaudry, of Chicago, is substituted for Dr. Bouton again. We take this opportunity of correcting these errors and regret its occurrence, which, of course, was unintentional on the part of the stenographer making the report.

NEWS OF THE STATE.

Dr. Burr Caldwell has located at Bethany.

Dr. Young, of Breckenridge, has located at Hamilton.

Dr. Graves, formerly of Dement, has located at Bethany.

Dr. Charles True, of Kankakee, is ill with angina pectoris.

Dr. Samuel R. Slaymaker, of Chicago, has sailed for Europe.

Dr. C. C. Rhodes, of Monticello, has located in Terre Haute, Ind.

Dr. S. H. Rutledge, of Pilot Mound, Iowa, has located at Milford.

Dr. C. Fred Grimmer, of Topeka, expects to leave soon for Vienna.

Dr. Franklin E. Wallace, of Monmouth, sailed for Europe August 15.

Five cases of diphtheria are reported in one family near Blue Mound.

Dr. C. C. Walker, formerly of Chicago, has located in Lamberton, Minn.

Dr. and Mrs. G. W. Fiegen, of Nauvoo, are victims of an automobile accident.

Dr. J. Bernard Carey, of Donaldson, was operated on at St. Louis August 3.

Dr. Stephen W. Cox sailed from Montreal to Liverpool the first week in August.

Dr. R. F. Lischer has succeeded to the practice of Dr. J. O. DeCourcy at Mascoutah.

Diphtheria has developed at Edwards Station, six cases being reported to date.

Dr. C. W. Lillie has been elected chief of staff of the Henrietta Hospital, East St. Louis.

Dr. and Mrs. Arthur R. Elliott have sailed for Europe to remain until the 1st of October.

Dr. H. G. Harris, of Chicago, has become a partner of Dr. A. W. Wilson, of Wilmott, S. D.

On August 11 a daughter was born to Dr. and Mrs. Edson B. Fowler, 3359 Indiana avenue, Chicago.

Dr. Ira Frank is slowly improving from injuries received in an automobile accident some weeks ago.

Dr. Don Deal, a recent graduate of the Northwestern University Medical School, has located in Springfield.

Dr. Scott, of Elliott, has succeeded Dr. Yantis at Foosland, and has occupied the office and residence of Dr. Yantis.

Dr. Yantis, formerly of Foosland, has moved to Urbana, and has taken an office in the new Flatiron Building there.

Dr. F. A. Olms, who has been located for several years in South Elgin, has been succeeded by Dr. C. E. Struve, of Chicago.

Dr. and Mrs. Edson B. Fowler, of 3359 Indiana avenue, Chicago, have returned home after a year spent in study and travel in Europe.

Dr. Leslie Casburn has located at Bentley, having bought out Dr. G. E. French. Dr. French has gone to San Francisco, Cal.

Dr. Albert H. Dollear, of Jacksonville, has been appointed assistant physician at the Illinois Western Hospital for the Insane.

The Swedish-American Hospital Association, Green and Sixtieth streets, Chicago, has borrowed $35,000.00 for ten years at 5 per cent.

Mrs. Minnie Girk and Mrs. Pauline Schulke, of Decatur, have been fined $100.00 and costs for practicing midwifery without a license.

Dr. H. Edward Sauer, of Chicago, has recovered from an operation for appendicitis recently performed, and is able to resume work.

The Isolation Hospital at Chicago has been vacant since July 18. This is the first time that the hospital has been without patients since January 1.

The State Board of Health reports diphtheria as prevalent in several different parts of the state, deaths being reported from Roseville and Swan Creek.

Suit has been filed against the National Medical University by Mrs. Minnie S. Mason for the possession of the property on which this institution is located.

The Illinois State Board of Health has been making a careful examination of farm wells throughout the state, and has found about 40 per cent. of them to be polluted.

Dr. Nicholas Senn, of Chicago, has returned from the trip through northern and eastern Africa, where he went following the International Medical Congress at Lisbon.

The first case of smallpox which has appeared in Cook County for over a month was reported from Evanston on August 12. The patient had come from Michigan a few days before.

Dr. Svenning Dahl is in Europe for the purpose of study. Dr. Carl Doepfner will have charge of the surgical department of the Norwegian Lutheran Deaconess Hospital during Dr. Dahl's absence.

A case of smallpox was discovered in a Chicago hospital on August 14. The patient, who had recently returned from Milwaukee and Joliet, had been taken from a boarding house on West Madison street.

Carl C. Quale has asked the courts to compel the faculty of Dearborn Medical College to issue him a diploma. He declares that he was proficient in all his studies, but that the faculty have refused to graduate him.

Dr. F. B. Moore, formerly of Plano, has removed to Sterling and has rented the Richard Staples house on Sixth avenue. Dr. Moore has taken a suite of offices in the Bank Building and intends to practice medicine in Sterling.

Dr. Gin Wai Chan, a Chinese medical student, has been licensed by the State Board of Health to practice medicine in Illinois. This is said to be the first instance on record of a Chinaman receiving a license from the Illinois State Board.

Dr. Harry Kahn has returned from a year's study in Vienna and announces the removal of his office to the Columbus Memorial Building, 103 State street, Chicago, where his practice will be limited to diseases of the ear, nose and throat.

The Brokaw Hospital of Bloomington will complete an addition this summer which will be devoted to baths, lavatories and rooms for electrical treatment and massage. The new building will be of brick and will form the east wing of the hospital.

Dr. W. O. Ensign of Rutland, Dr. T. Ewing Cherry of Cowden, Dr. George C. Meacham of Taylorville, Dr. O. B. Babcock of Springfield and Dr. J. B. Maxwell of Mt. Carmel were delegates to the Republican State Convention recently held at Springfield.

Wesley Hospital, Chicago, has issued its seventeenth annual report, showing that since 1901 the hospital has increased in capacity from 28 to 150 beds. During the last year over 3,000 patients were admitted to the hospital. The total number of operations performed was 2,082.

Dr. R. C. J. Meyer, health officer of Moline, has obtained the authority to establish free public baths. A building which will contain accommodations for men and women is to be constructed at a cost of $1,000.00. It will also be used as headquarters for the Moline Division of the Illinois Naval Reserve.

Lawrence E. McGann, Comptroller of the city of Chicago, has received an offer from a woman philanthropist, whose name has not been disclosed, to erect a school for the deaf at Twenty-second street and Hawthorne avenue, where the city has property. It is said that a donation of $50,000.00 has been offered.

The health officer of Peoria reports smallpox in mild form in a family consisting of father, mother and six children, all of whom, having contracted the disease, were sent to the detention hospital. It is believed that the contagion was brought by a member of the family who recently returned home from California.

During the month of July coroner's juries in Chicago investigated 336 deaths, of which 150 were due to violence, 40 to street car and railway accidents and 33 to suicide. Twenty-four persons were drowned and 11 deaths were due to Fourth of July injuries. There were 14 homicides and one death following an automobile accident.

Under orders from Chief Medical Inspector Spalding of the Chicago Board of Health and Chief Sanitary Inspector Hedrick, the city has undertaken to drain the pools and fill in the hollows in "Streeterville." Residents along the Lake Shore drive have discovered that millions of mosquitoes are bred in the stagnant pools along the lake shore.

The Chicago Medical College, which for the last twenty years has formed the medical department of Northwestern University, has completed a merger with the university by giving a quit-claim deed for all of its property to the university trustees. This act marks the complete absorption of the former institution, one of the oldest medical colleges in the West.

Dr. D. M. Otis and Charles J. Graver, of Springfield, have been sued for $5,000.00 damages because it is alleged that they performed an autopsy on the body of John Gonsalves at the Springfield Hospital without the consent of his relatives. The physicians in this case claim that Gonsalves was a pauper and that they fulfilled the sections of the law permitting them to perform an autopsy.

The Illinois Medical College, the Chicago Summer School of Medicine, has given a trust deed to the Union Trust Company to secure a loan of $25,000.00 for five years at 5 per cent. The loan is secured by property owned by the college at the southwest corner of Washington and Halstead streets, and is being used for paying the remainder of the original price of the property and for improving the institution.

Newspaper reports state that Dr. Zook, of Princeville, has been arrested on a charge of sending libelous postal cards through the mail concerning his successor, Dr. O. E. Baker. Dr. Zook left Dunlap last fall, and Dr. Baker succeeded to his practice. Later on, it is claimed, Dr. Zook returned to Dunlap and resumed practice. This action on his part is said to have given rise to personal difficulties between the two physicians.

At a meeting of the trustees of the Illinois Eastern Hospital for the Insane and the State Board of Charities it was decided to make radical improvements in the system of nursing and the attention given to patients in the insane asylum. A pathological laboratory will be established and a pathologist employed who will keep careful records of all cases. The trustees also planned to open a training school for nurses in September.

The Cook County Board unanimously adopted a resolution on August 13 giving the Chicago Tuberculosis Institute the privilege of establishing a camp for consumptives on the grounds belonging to Cook County at Dunning. The camp will be established at once and will be kept open until November 1 at least. There are 20 female patients ready for admission to the camp. The attending staff is composed of Drs. Henry B. Favill, Ethan A. Gray and Theodore Sachs.

Dr. Francis Stewart, recently convicted on the charge of robbery, was sentenced to an indefinite term in the penitentiary by Judge Kersten on August 17. This is the second conviction secured against Stewart. Two years ago he was found guilty and sentenced to the penitentiary, but the Supreme Court reversed the decision. The charge in the second case was brought by Felix Berard, of Montreal, who, it is said, called on Dr. Stewart on Oct. 1, 1905. Stewart, after examining him for a few minutes, is said to have demanded $110.00 and to have used threats which induced Berard to pay him the money.

The Monmouth City Council has passed an ordinance forbidding the distribution of medicines from house to house. The measure makes it unlawful for any person, corporation, agent or employé to distribute gratuitous samples of medicines, drugs, ointments, pills, powders or pellets from house to house, without first securing a license. It further provides that no license shall be issued unless the health officer of the city

shall approve of the samples to be distributed, also that the formula for all medicines proposed for distribution shall be submitted with the samples. A third clause provides that before any such license shall be granted the applicant must file with the city clerk a bond in the sum of $2,500.00, with satisfactory securities, which bond shall guarantee that the person, firm or corporation distributing such samples shall pay any or all damages resulting to any persons who may take or use such samples. The fourth clause of the ordinance provides for a fine of $50.00 and costs, or imprisonment for one to thirty days, for any violation of the ordinance. The mayor having failed to sign the ordinance after its adoption by the City Council, it became a law without his approval.

MARRIAGES.

FRANK DONALD BURNS, M.D., Chicago, at Shellsburg, Iowa, July 18.

STANLEY CASTLE, M.D., Springfield, to Miss Elsie M. McDowell, of Chicago.

WILLIAM G. ROSS, M.D., Kempton, to Miss Carrie Hays, of Joliet, June 16.

ALOYSIUS J. LENNON, M.D., Joliet, to Miss Rose Finlen, of Streator, June 20.

VICTOR PACYNA, M.D., to Miss Ethel Friend, both of Chicago, August 7.

BURTON HAZELTINE, M.D., of Chicago, to Miss Leitch, of Evanston, August 25.

DWIGHT E. MORTON, M.D., to Miss Bertha C. Bugg, both of Taylorville, July 5.

ROBERT H. HERBST, M.D., to Miss Grace Adele Bellows, both of Chicago, July 25.

W. O. MCBRIDE, M.D., Joliet, to Miss Nannie Francis, of Lima, Ohio, June 20.

F. A. RENNER, M.D., St. Jacob, to Miss Della May Midgley, of Lebanon, August 4.

HALFORD J. MORLAN, M.D., to Miss Percy Eugene Bohrer, both of Ludlow, June 30.

EDWARD C. ROSENOW, M.D., Chicago, to Miss Lydia Senty, of Arcadia, August 1.

CHARLES O. NELMS, M.D., Taylorville, to Miss Cora T. Allen, of Rock Island, July 26.

ELBERT A. BING, M.D., Browns, to Miss Cora Estes Whitson, of Johnsonville, June 27.

A. HARTMAN, M.D., of Chicago, to Miss Nora May Ball, of Grand Haven, Mich., July 18.

ISAAC CLARK GARY, M.D., Chicago, to Miss Emma C. Bollinger, of Kahoka, Mo., August 1.

D. F. MORTON, M.D., Taylorville, to Miss Plowman, of Missouri, formerly of Taylorville.

C. A. W. ZIMMERMAN, M.D., to Miss Cecil Ray Mehan, both of East St. Louis, June 4, 1906.

JAMES LEWIS FLEMING, M.D., Chicago, to Miss May Ormsby, Dougherty, Iowa, June 20.

ALFRED HUGH FOWLER, M.D., Chicago, to Miss Josephine Smith Bates, of Fairbury, June 30.

DEATHS.

JOHN H. SCHMIDT, M.D., died at his home in Quincy, July 28, after a long illness, aged 83.

J. S. HAMILTON, M.D., committed suicide at his office in Joy, by cutting his throat, July 27, aged 40.

THOMAS C. THOMAS, M.D., died at his home in Peoria, July 21, after an illness of three years, aged 69.

WILLIAM S. CHANNING, M.D., died in the Presbyterian Hospital, Chicago, June 28, after an illness of nine weeks.

WILLIAM G. HOUTZ, M.D., died at his home in Lincoln, Ill., June 30, from septicemia, after an illness of seven days, aged 75.

JOSEPH DE VERE, M.D., died at his home in Chicago, July 29, from cancer of the stomach, after an illness of one year, aged 55.

JOHN T. GRAY, M.D., died at his home in Chicago, July 10, from cerebral hemorrhage, after an illness of less than an hour, aged 67.

JOHN ELLISON BEST, M.D., died at his home in Arlington Heights, August 1, from myocarditis, after an illness of five weeks, aged 63.

ALBERT C. JOHNSON, M.D., died at his home in Sidell, June 10, from tuberculosis of the spine, after an illness of one year, aged 34.

SAMUEL P. BOARDMAN, Springfield, graduate of the University of Wooster, Cleveland, Ohio, 1895, while temporarily insane, committed suicide.

ITHIEL SILSBY STEVENS, M.D., Cincinnati College of Medicine and Surgery, 1880, of Peoria, died, August 1, from acute spinal disease, after an illness of one day, aged 55.

WILLIAM FEGERS, M.D., Northwestern University Medical School, 1879, of McHenry, died suddenly at his home at Palm Beach, Pistakee Bay, August 7, from heart disease, aged 72.

DR. WILLIS C. GLIDDEN, M.D., Chicago Homeopathic Medical College, 1879, died at his home in De Kalb, July 15, from diabetes, from which he had suffered for several years, aged 56.

EDMOND CHURCH INGALLS, M.D., Rush Medical College, 1894, but never a practitioner of medicine, formerly a resident of Oak Park, Ill., for many years a sufferer from sciatica, on account of which he had acquired the habit of drug use, which he had repeatedly tried to overcome, died in the Shirley Hotel, Denver, Colo., August 1, from an overdose of cocain, aged 38.

ALEXANDER MEMELSDORF, M.D., University of Würzburg, Germany, 1881; some time staff surgeon in the German Army, professor of dermatology and venereal diseases in the Illinois Medical College, a member

of the American Medical Association; a respected practitioner and a successful teacher, died at his home in Chicago, May 18, from heart disease, after an illness of one year, aged 47.

Dr. James C. Harmon died August 1, 1906, of progressive paralysis, at the Julia F. Burnham Hospital, Champaign. Dr. Harmon was born in Vermont and grew to manhood among the rugged hills of that state. Upon the breaking out of the civil war, he enlisted as a volunteer in the Thirteenth Vermont Infantry and, with his regiment, became part of General Stannard's celebrated Vermont Brigade, which did such effective service at the battle of Gettysburg. In this engagement Dr. Harmon received injuries that made it necessary for him to quit the service, and, upon returning to civil life, he entered the medical department of Vermont University, from which in due time he graduated. In the early seventies he removed to Illinois and located at Rantoul, Champaign County, where he soon secured a large practice. For some years Dr. Harmon had been in failing health. Nevertheless he continued in practice up to about two months before his death. He was held in the highest esteem by his fellow practitioners and fellow-citizens. Few men devoted their lives to the sick and suffering as unselfishly as did Dr. Harmon. As long as his health permitted he was a regular attendant upon the meetings of the Illinois State Medical Society. His funeral, which occurred at Rantoul August 3, was largely attended by all classes.